Role of Hypoxia-Regulated Non-Coding RNA Molecules in Canine Oral Melanoma

（犬のメラノーマにおける低酸素環境下で調節される

非コード RNA 分子の役割）

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Role of Hypoxia-Regulated Non-Coding RNA Molecules in Canine Oral Melanoma

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Chapter 2: Hypoxia-Mediated Long Non-Coding RNA Fragment Identified in Canine Oral Melanoma through Transcriptome Analysis

Abstract

Canine oral melanoma (COM) is an aggressive malignancy characterized by rapid progression and a high propensity for metastasis. The hypoxic tumor microenvironment is critical to COM's invasive behavior, influencing gene expression and cellular signaling pathways. Non-coding RNA molecules, including microRNAs (miRNAs) and long non-coding RNAs (lncRNAs), are known to play pivotal roles in tumor adaptation to hypoxia. However, their specific regulatory mechanisms in COM remain poorly understood. This dissertation investigates the roles of hypoxia-regulated non-coding RNA molecules, elucidating their contributions to COM progression and their potential as diagnostic biomarkers and therapeutic targets.

In the first chapter, I studied the dysregulated hypoxia-related microRNA in COM. Hypoxia contributes significantly to the progression and metastasis of COM by inducing miRNA expression changes that regulate critical oncogenic pathways. This chapter explores the expression profiles of hypoxia-regulated microRNAs (HRMs) in canine oral melanoma using primary-site (KMeC) and metastatic (LMeC) COM cell lines cultured under normoxic (21% O2) and hypoxic (2% O2)

conditions. Next-generation sequencing (NGS) and subsequent qPCR validation identified a set of hypoxia-regulated miRNAs, including miR-21, miR-210, and miR-301a, all exhibiting significant upregulation under hypoxic conditions.

Notably, miR-210, a well-known hypoxia marker, showed progressive upregulation, confirming its role in hypoxia-induced signaling. miR-21, identified as a central hub in the miRNA regulatory network, targeted vital oncogenes such as VEGF, PTEN, and TGFBR2, promoting angiogenesis, metastasis, and cell survival. miR-301a, uniquely active in metastatic cell lines, was implicated in aggressive cancer phenotypes by regulating pathways like MAPK1 and cyclin-dependent kinases. Network analyses using KEGG pathways and miRNet highlighted the complex interplay between these HRMs and critical oncogenic signaling cascades.

In this first chapter, I concluded that hypoxia-induced miRNA dysregulation drives tumor progression by influencing cell survival, angiogenesis, and metastasis pathways. These HRMs serve as potential biomarkers for hypoxic adaptation and targets for therapeutic intervention.

In the second chapter, building on the findings from Chapter 1, I studied the dysregulated hypoxia-related lncRNAs in COM. Using transcriptomic profiling via NGS, numerous lncRNAs were found to be dysregulated under hypoxic conditions in both primary and metastatic COM cell lines and clinical tumor tissues. Among these, a novel lncRNA fragment, ENSCAFT00000084705.1, emerged as a significant molecule of interest.

ENSCAFT00000084705.1 was consistently downregulated under hypoxic conditions in both primary-site (KMeC) and metastatic (LMeC) COM cells and in COM clinical tissue samples compared to normal oral tissue. This downregulation was validated through qPCR, demonstrating progressive suppression of ENSCAFT00000084705.1 expression with increased hypoxic exposure. Interestingly, its absence in plasma and extracellular vesicles indicated that this lncRNA is tumor-specific and unsuitable as a circulating biomarker.

Functional exploration suggested that ENSCAFT00000084705.1 may regulate hypoxia-induced metastasis and tumor aggression. While its exact molecular function remains elucidated, its consistent expression pattern highlights its potential significance in COM biology. The findings

emphasize the need for further research into lncRNAs as contributors to hypoxia-driven tumor adaptation and as targets for novel therapeutic strategies.

In conclusion, I elucidated the critical roles of hypoxia-regulated non-coding RNA molecules in canine oral melanoma, emphasizing both microRNAs and long non-coding RNAs. The identification of miR-21, miR-210, and miR-301a as critical players in hypoxia-induced oncogenic pathways and the discovery of the lncRNA ENSCAFT00000084705.1 as a hypoxia-specific regulator provides valuable insights into COM biology.

These findings highlight the complex interplay between the tumor microenvironment and non-coding RNA-mediated gene regulation. Collectively, this research contributes to the understanding of hypoxia-driven mechanisms in COM progression and underscores the potential of non-coding RNAs as biomarkers and therapeutic targets for this aggressive cancer.

General Introduction

In recent years, molecular diagnostics and therapies in oncology have increasingly focused not only on mRNA (messenger RNA) but also on various small non-coding RNAs (ncRNAs). While mRNA has traditionally been the primary focus of transcriptome research due to its direct role in protein synthesis—the functional unit of biological processes—the past two decades have witnessed a growing interest in ncRNAs. These ncRNAs include diverse transcripts, such as microRNAs (miRNAs), long non-coding RNAs (lncRNAs), and other small RNA species, including snoRNAs, snRNAs, tRNA fragments, and Y RNA fragments. In human medicine, the study of these ncRNAs has expanded dramatically, revealing their critical roles in various diseases, including cancer. In contrast, veterinary oncology has seen comparatively limited research into ncRNAs, highlighting an urgent need for more systematic investigation in this field.

Among ncRNAs, microRNAs have garnered particular attention in human medicine, where numerous studies have elucidated their roles and functions as key regulators of gene expression. However, in the veterinary

field, research on microRNAs and other ncRNAs remains relatively underdeveloped.

Canine oral melanoma (COM) research commands a high priority in veterinary medicine. Melanomas represent around seven percent of all malignant tumors in dogs, and most frequently occur in the oral cavity [1, 2]. COM has the poorest prognosis of any melanoma in dogs with a median survival time for stage II and stage III of the disease at around six to eight months from diagnosis [2]. Moreover, the survival time is reduced to two months if pulmonary metastasis develops at the time of the diagnosis of COM [2]. COM research may have a more comprehensive application since these canine tumors resemble some human mucosal melanomas macroscopically [3] and human non-UV-induced cutaneous melanomas clinically and histopathologically [4]. Advances in diagnosing and treating this disease in dogs may ultimately benefit human patients [1, 5].

COM is regarded as one of the most aggressive tumors in dogs, and a hypoxic tumor microenvironment may be implicated in its highly aggressive nature and high propensity to metastasize [6]. As a solid tumor, COM sees a fall in oxygen pressure (from 1% to 2%), with the oxygen supply

proving unequal to the tumor growth [7, 8]. Crucially, hypoxia can cause the upregulation of tumorigenic factors and downregulation of anti-tumorigenic factors, in addition to mediating tumor angiogenesis and cancer stem cell quiescence [9-11]. Thus, in several ways, hypoxia may act as a driver of tumor aggression and promote the progression to metastasis and is particularly relevant for highly aggressive and frequently metastasizing malignant tumors such as COM.

In my PhD dissociation research, I specifically investigated the roles of small non-coding RNAs in canine oncology. The first chapter focused on microRNAs, while the second chapter extended the scope to other small non-coding RNAs beyond miRNAs.

Chapter 1

Hypoxic miRNAs expression are different between primary and metastatic melanoma cells

1. Abstract

MicroRNAs (miRNAs) can rapidly respond to cellular stresses, such as hypoxia. This immediate miRNA response regulates numerous genes and influences multiple signaling pathways. Therefore, identifying hypoxia-regulated miRNAs (HRMs) is important in canine oral melanoma (COM) to investigate their clinical significance.

The hypoxic and normoxic miRNA profiles of two COM cell lines were investigated by next generation sequencing. HRMs were identified by comparing miRNA expression profiles in these cell lines with that in COM tissue. The HRM profile was different between cell lines of primary and metastatic origin, except for miR-301a and miR- 8884. The time course of miRNA expression determined by qRT-PCR, especially for miR-210 and miR-301a, showed that metastatic cells are more resistant to hypoxia than primary cells. Analysis of an experimentally validated human miRNA target database revealed that miR-21 and miR-301a control a complex gene regulatory network in response to hypoxia, which includes pathways of well-known oncogenes, such as *VEGF*, *PTEN*, and *TGFBR2*.

In conclusions, I revealed the HRM of COM. Moreover, my study shows the difference in regulation and response of hypoxic miRNAs between

primary and metastatic originated melanoma cells.

2. Introduction

A significant factor that determines the resistance and aggressiveness of a tumor is its microenvironment. Hypoxia is a microenvironmental factor of solid tumors in which oxygen tension is reduced from the normal 4.6–9.5% to 1–2%. It creates intratumoral oxygen gradients, contributing to heterogeneity, and produces a more aggressive and metastatic phenotype [12, 13]. In human melanomas, hypoxia promotes growth, metastasis, and angiogenesis via HMGB1 and VEGF signaling [14]. Moreover, in solid tumors, hypoxia-inducible factors (HIFs) promote the formation of the early-stage metastasis niche, as well as invasion, intravasation, migration, and late-stage metastasis [15].

The cellular response mechanisms to hypoxic changes in the microenvironment are diverse; however, miRNA-based signaling is involved in most cases [16]. miRNAs are 20–22 nucleotide small non-coding RNAs that can regulate gene expression in several ways. miRNAs that change their expression in response to hypoxia are named hypoxia-regulated miRNAs (HRMs). For example, miR-210, a well-studied hypoxia-related miRNA, is involved in invasion, angiogenesis, and metastasis [17]. Moreover, hypoxia-mediated oncogenic regulation of miR-21, miR-191, miR-382, and miR-301a

is reported in several human cancers [18 - 24].

Canine oral malignant melanoma (COM) is the most common oral malignancy in the dog [25]. In dogs, 40–62% of malignant melanomas are in the oral cavity, which is about 7% of all malignant tumors [26]. COM is characterized by local invasion with a high probability of recurrence after surgical resection. Also, COM has the propensity to be aggressively metastatic with rapid progression to advanced-stage disease [27]. Dogs with regional metastasis have shorter survival times than dogs without metastases, even after surgery, radiotherapy and/or DNA vaccination [28, 29]. A recent study showed a 335 day median survival time for COM cases receiving an adjuvant therapy after surgical tumor excision [28, 30].

COM is considered to be a spontaneous natural model for human melanoma [26, 31]. Human oral mucosal melanomas are also aggressive and fast-growing invasive tumors that have metastatic rates of approximately 66% [32]. HRM signaling has been reported in human melanoma [23, 33], as have miRNomes and proteomes of hypoxia-regulated exosomes from human melanoma [34]. Therefore, it is important to identify HRMs and the pathways they regulate to create effective treatments for melanoma. However, to date, no study has investigated HRMs in COM.

In laboratory settings, cells are often grown in hyperoxic (20.9%) conditions, which does not mimic the disease state. In this study I first analyzed miRNA profiles of hypoxic (2% oxygen) and normoxic primary (KMeC) and metastatic (LMeC) COM cell lines and compared them with that of melanoma tissue to identify HRMs. Differentially expressed hypoxic miRNAs were revealed in primary and metastatic cells and validated by qRT-PCR. Finally, I queried human databases to determine gene regulatory functions of key miRNAs.

3. Ethics statement

Informed consent to use the specimens in this study was obtained from the dog patient's owners. This study was approved by the Kagoshima University's Laboratory Animal Committee (A10031).

4. Materials and Methods

Cell culture

Two dog oral melanoma cell lines, KMeC and LMeC, which originated from primary and metastatic sites, respectively, were stored in freezing medium (039-23511, CultureSure, Fujifilm Wako Pure Chemical Corporation, Osaka, Japan). Culture conditions were as described previously [35]. A hypoxia incubator (Heracell™ 150i, Thermo Fisher Scientific, Waltham, MA, USA) was used to achieve the desired low oxygen condition (2% O_2). Cells were also grown in parallel in normoxic or hypoxic conditions (5% CO_2, 37°C, 21 or 2% O_2) for the indicated times. Cells were grown until confluency, and then RNA was extracted for evaluation.

RNA extraction

Total RNA was isolated from normoxic and hypoxic cells using an mirVana RNA Isolation kit according to the manufacturer's instructions (AM1560, Thermo Fisher Scientific). The concentration of total RNAs was measured using a NanoDrop 200c spectrophotometer (ND2000C, Thermo Fisher Scientific). An Agilent 2100 Bioanalyzer (G2939BA, Agilent Technologies, Santa Clara, CA, USA) was used to assess RNA quality and

integrity. The RNA Integrity Number (RIN) mean value of all samples was >9.0.

Next generation sequencing

Total RNA was sequenced by Hokkaido System Science (Hokkaido, Japan). Briefly, small RNA libraries were prepared using 1 μg of total RNA and a TruSeq Small RNA Library Preparation kit according to the manufacturer's instructions (Illumina, San Diego, CA). After library preparation, adapters (5′and 3′) were ligated to the small RNAs and cDNA were generated by reverse transcription followed by amplification. The amplified cDNA was then gel purified before cluster generation and Illumina/Hiseq2500 sequencing by Hokkaido System Science (Hokkaido, Japan). The company provided high quality reads with Phred scores greater than 35. Sequences were submitted to the NCBI sequence read archive[1] (SRA) database.

Bioinformatic analysis

Sequence reads were analyzed using the CLC Genomics Workbench,

V10.0 and 12.0 according to the developer's instructions (https://digitalinsights.qiagen.com, CLC Bio, Qiagen, Germany). Adapter trimming, quality control and ambiguity reads sorting was performed. Default parameters were set for all analyses. Briefly, I first removed the adapter and low-quality ambiguous reads. Clean reads were analyzed according to the small RNA analysis guidelines. Small RNAs were extracted from the clean reads and counted. They were then annotated using miRBase and two other small RNA databases from ensemble containing dog and human non-coding RNAs (Canis_familiris/canfam3.1.ncrna and Homo_sapiens/GRCh37.ncrna). During annotation miRBase had higher priority than the other two non-coding RNA databases. Sequence fragment counts were used as the expression values for the miRNAs or the other small RNAs. Difference in expression between two groups was estimated by EDGE (empirical analysis of differential gene expression) analysis.

Human database analysis and network construction and analysis

miRNet, an integrated platform linking human miRNAs, targets and functions, was used for functional analysis of miRNAs [36]. I selected conserved miRNAs between human and dog for this analysis. Analysis was

performed separately for primary and metastatic hypoxic miRNAs. A large network was minimized according to the appropriate filters. After network construction the KEGG database was selected for pathway analysis. Pathway significance was calculated by the hypergeometric test ($p<0.05$).

qPCR

TaqMan microRNA and gene expression assays (Thermo Fisher Scientific) were used to measure the expression levels of miRNAs. Two nanograms of total RNA was reverse transcribed to cDNA using a TaqMan MicroRNA Reverse Transcription kit according to the manufacturer's protocol (4366597, Thermo Fisher Scientific). A TaqMan First Advanced Master Mix kit was used for qPCR. The StepOnePlus real-time PCR system (Thermo Fisher Scientific) was used to detect the signal. The thermocycling conditions used for qPCR followed the manufacturer's instructions and were: 50°C for 2 min, 95°C for 20 sec; followed by 40 cycles of denaturation at 95°C for 1 sec and annealing/extension at 60°C for 20 sec. All experiments were performed in duplicate. *RNU6B* was used as a reference gene to calculate relative expression. ΔCq was calculated by subtracting the Cq values of *RNU6B* from the Cq values of the target miRNAs. ΔΔCq was

calculated by subtracting the mean target miRNA ΔCq value from the ΔCq value. The $2^{-\Delta\Delta Cq}$ method was used to evaluate expression [37]. Undetermined qPCR reactions were assigned the cycle 36 Ct value. Mature miRNAs were quantified using TaqMan MicroRNA assays. The primer IDs were *RNU6B* (ID: 001093), miR-450b (ID: 006407), miR-301a (ID: 000528), miR-210 (ID: 000512), and miR-146b (ID: 002755). Primer information can be found at: https://www.thermofisher.com/order/genome-database/.

Statistical analysis

Statistical analysis was performed using GraphPad Prism 7. Hierarchical clustering analysis was performed for every miRNA from each sample. Euclidean distance metrics and complete linkage clustering were applied. Comparison between groups was evaluated by ordinary one-way ANOVA followed by Turkey's multiple comparison test. A P-value <0.05 indicated statistical significance.

5. Results

Next generation sequencing of hypoxic and normoxic cell lines

To investigate hypoxia-related miRNAs in COM, KMeC and LMeC cell lines were analyzed by Illumina HiSeq 2500 next generation sequencing. Three replicates of each cell line in hypoxic and normoxic conditions were analyzed. Sequences were submitted to the Sequence Read Archive (SRA) under accession number; PRJNA629070. After adapter trimming and quality checking, more than 280 million reads were obtained (Appendix). All sequence data were high quality metrics (>35 Phred score). Among them, 20 to 27 million reads were obtained from each sample of KMeC cells and 19 to 22 million reads from each sample of LMeC cells under normoxic or hypoxic conditions. No significant difference was found during data generation between normoxic and hypoxic groups of the KMeC (normoxic vs hypoxic; P=0.1) and LMeC (normoxic vs hypoxic; P=0.1) cell lines. More than 75–87% of reads were annotated in the groups shown in the left panels of Figure 1A and B. Reads were annotated using miRBase and the canine and human non-coding RNA databases. The highest percentage of annotation was obtained using miRBase (Figure 1A, B, right panel). Similar annotation trends from different databases indicated no bias during read annotation.

Cluster analysis of the expressed miRNA tags indicated that normoxic and hypoxic replicates of the respective cell lines were clustered together (Figure 1C). This indicated that data were suitable for further differential expression analysis.

Hypoxia induced differential miRNA expression in KMeC and LMeC cell lines

To investigate differentially expressed miRNAs, I chose the following stringent filtering criteria: FDR <0.05, FC >2, and minimum expression >5 (mature count) per replicate. Using these criteria, I found 204 and 151 miRNA expressed tags (miRESTs) that were differentially expressed between normoxic and hypoxic KMeC and LMeC cells, respectively. These miRESTs were mature miRNA sequences along with their isomiRs (miR variants with respect to the reference sequence). Among them, 117 were up- and 87 were down-regulated in KMeC cells, whereas 76 were up- and 75 were down-regulated in LMeC cells grown in hypoxic conditions compared with cells grown in normoxic conditions (Appendix). Among them, 28 miRESTs were up- and 31 were down-regulated in both cell lines grown in

hypoxic conditions (Appendix). This indicated that hypoxic conditions may influence the regulation of miRNAs in melanoma patients. I therefore investigated HRMs in clinical melanoma tissue samples.

Melanoma-related hypoxic miRNAs

I investigated melanoma-related HRMs using a unique approach. To identify up-regulated HRMs in melanoma, I performed three different comparisons; 1. Control vs Melanoma (tissue) 2. Control vs Hypoxic cell line and 3. Normoxic vs Hypoxic cell line. Sequence reads of control (healthy oral tissue) and melanoma tissue were used from a previous study [38]. Up-regulated miRNAs in all three comparisons were considered as upregulated HRMs in melanoma. The same approach was applied to identify down-regulated HRMs in melanoma. I found 14 miRESTs were upregulated in the KMeC hypoxic cell line and melanoma tissue samples compared with the control and/or normoxic samples (Figure 2A, Appendix). Among these 14 miRESTs, two have isomiRs (miR-450a and miR-450b). miR-205 was the only down-regulated HRM in all three comparisons (Figure 2B).

KMeC is a primary metastatic melanoma cell line. Therefore, I considered that regulation of miRNAs in metastatic cells may differ between

hypoxic and normoxic conditions. I therefore investigated LMeC cells; a canine metastatic melanoma cell line. Following the above approach, I identified 10 miRESTs that were upregulated in hypoxic LMeC cells and melanoma tissue samples compared with control and/or normoxic samples (Figure 2C, Appendix). Among them, miR-196b has an isomiR. Interestingly, I did not find any miRNAs that were down-regulated in all three comparisons (Figure 2D). Among the up-regulated melanoma HRMs, miR-301a and miR-8884 were common between the KMeC and LMeC cell lines (Figure 2E).

Validation of hypoxia-related miRNAs

To validate hypoxia-related miRNAs, I measured the time course of miR-210 expression in cell lines under hypoxic conditions. MiR-210 expression increases under hypoxia by HIF-1 binding to its hypoxia response elements and its expression is considered as hypoxia marker [39 - 41]. Therefore, in my experiment I considered miR-210 as a marker of hypoxia. Figure. 3A and B show that relative miR-210 expression increased with time in KMeC and LMeC cell lines under hypoxia. miR-210 expression was significantly increased in KMeC cells after 24 hours and in LMeC cells after 48 hours.

Increased expression of miR-450b and miR-301a was confirmed in hypoxic KMeC cells (Figure 3C–D) with significant increases after 24 hours. miR-301a and miR-146b expression was confirmed in LMeC cells (Figure 3E–F) and their expression was significantly increased after 48 and 72 hours, respectively.

I previously reported that expression of miR-450b, miR-301a and miR-146b was significantly increased in COM tissue samples [38]. These findings indicate that hypoxia leads to upregulation of these miRNAs in melanoma tissue.

Function of hypoxia-up-regulated miRNAs in primary and metastatic melanoma

To understand the function of the up-regulated HRMs in gene regulation, I analyzed the HRMs using miRNet; an integrated platform linking miRNAs and experimentally validated targets to generate signaling and network functions. Within miRNet, I first created a network of the miRNAs with their target genes. The network was trimmed based on default parameters of degree, betweenness and shortest path filter. Similar mature human miRNAs were considered for this analysis. I analyzed the up-regulated

miRNAs of KMeC and LMeC cells separately.

I inputted 11 KMeC (primary melanoma)-related miRNAs into the miRNet platform. Interestingly, all 11 miRNAs were present in the filtered network (Figure 4A), indicating that these HRMs are co-related or interconnected in their regulatory function. I then investigated the pathways regulated by these miRNAs by performing KEGG pathway analysis with the target genes of this network. I found 18 significant pathways (P value <0.05) (Table 1A). Genes present in the significant pathways are labeled with a yellow circle in figure 4A. Pathway analysis revealed that the HRMs regulate signaling pathways in several cancers, including human melanoma.

miR-21 is the key hub node as it has the highest degree and betweenness centrality (Appendix). The network shows that miR-21 controls a complex regulatory network with well-known oncoregulatory genes, including *VEGF* and *PTEN*. miR-424, miR-107 and miR-301a are the second most important miRNAs according to the degree and betweenness centrality and they cooperate with miR-21 to control this complex network.

Eight miRNAs were selected from the miRNAs up-regulated in hypoxic LMeC cells (metastatic melanoma) for analysis through the miRNet

platform. Six miRNAs were present in the filtered network (Figure 4B). KEGG pathway analysis of the target genes in the network revealed nine significant pathways (P value <0.05) (Table 1B). This showed that LMeC-related HRMs mostly regulate aggressive cancers, such as myeloid leukemia and colorectal cancer, which tend to metastasize. Also, TGF-beta signaling, which is responsible for cell differentiation, was present in this pathway list.

miR-301a is the key hub node with the highest degree and betweenness centrality (Appendix). This miRNA regulates the network via *MAPK1*, *TGFBR2*, *CCNA2*, and other signaling genes. miR-196a, miR-212 and miR-132 are the second most important miRNAs according to the degree and betweenness centrality. They cooperate with miR-301a to control the regulatory network.

6. Discussion

Dr. Miura's laboratory previously reported that several miRNAs are differentially expressed in COM [38]. Hypoxia is a well-documented micro-environment factor of tumors that can modulate the expression of miRNAs in melanoma. However, to the best of my knowledge no study explored the hypoxia regulated miRNAs in oral melanoma. Therefore, in this study, I investigated the miRNAs that are regulated by hypoxic conditions during oral melanoma development.

Identification of HRMs might not be possible by simply comparing cell lines grown in hypoxic and normoxic conditions because some miRNAs may be regulated by induced hypoxia during cell culture. For example, expression of miR-210, a micromanager of hypoxic pathways, is increased by HIF regulation [39]. Therefore, my unique strategy defined biologically active melanoma-related HRMs by identifying common deregulated (up- or down-regulated) miRNAs among three comparisons; 1.) control vs melanoma, (healthy oral and melanoma tissue) 2.) control vs hypoxic cell lines (healthy oral and KMeC or LMeC cells) and 3.) normoxic vs hypoxic cell lines (KMeC or LMeC cells). In this way I were able to better distinguish the HRMs both in primary (KMeC) and metastatic (LMeC) cells. With my study for the first

time, I revealed HRMs in oral melanoma and showed that hypoxic response of miRNAs are different between primary and metastatic melanoma cells.

HIF signaling influences the metastatic cascade of invasion, intravasation, migration, extravasation and establishment of the premetastatic niche [42]. Therefore, I assumed that hypoxic regulation of miRNAs is different between primary and metastatic cells. My analysis found that the hypoxic miRNA signature between primary (KMeC) and metastatic (LMeC) cells was different, except for miR-301a and miR-8884. This indicates that miRNA signaling in metastatic cells is different from that in primary cells in hypoxic conditions, which is consistent with the microenvironment or genomic differences between primary and metastatic tumors [43, 44]. Moreover, these miRNAs should correlate with HIF signaling in the metastatic cascades, which prompts further study.

The only hypoxia induced down-regulated miRNA was miR-205. A tumor suppressive role of this miRNA was reported in human and dog melanoma [45-47]. Another study reported the regulation of miR-205 and E2F1 in melanoma cell proliferation and senescence [48]. E2F1 regulates the cell cycle, angiogenesis and autophagy in hypoxia by interacting with HIF-1α [49]. Moreover, a miR-205 binding site is present in the HIF-1α mRNA

(www.targetscan.org); therefore, further study is warranted to investigate how hypoxia modulates miR-205 expression in melanoma. Off note in ovarian and lung cancer, hypoxia mediate upregulation of miR-205 leading to epithelial–mesenchymal transition whereas in melanoma, breast and colon cancer opposite phenomenon was reported [50-53].

miRNAs with conserved sequence show similar gene regulation in both human and dog melanoma [54]. I, therefore, investigated the gene regulatory function of the hypoxia-related miRNAs using human databases, which include experimentally validated miRNA targets (miRNet). This analysis established regulatory networks for both the primary and metastatic melanoma hypoxia-related miRNAs. miR-21 and miR-301a were the key HRMs of the primary and metastatic cell lines, respectively. Consistently, miR-21 and miR-301a are induced by hypoxia [23, 55]. Up-regulation of miR-21 and its oncogenic properties have been extensively studied in melanoma and other cancers [56, 57]. Similarly, up-regulation of miR-301a and its oncogenic function have been evaluated in canine and human malignant melanoma [38, 58]. Furthermore, a feedback loop exists between HIFs and miR-21 and 301a [23, 24, 54].

Hypoxia induces the major metastatic cascades and leads to clinical

resistance [59, 60]. Analysis of HRMs using human databases showed that melanoma and other well-known cancer-related signaling pathways, such as p53, Jak-STAT, TGF-beta signaling, focal adhesion, and cell cycle pathways respond significantly to hypoxia. Moreover, network analysis revealed that these HRMs can typically regulate several cancer related genes in COM, such as *VEGF*, *TGFBR2*, *PTEN*, *MAPK1*, and *CCNA2*, as reported in the human databases. Overall, miR-21 and 301a are good candidates for hypoxia-related targeted therapy in human and canine cancer.

Several reports describe up-regulation of miR-210 in hypoxia [39, 40]. I, therefore, first confirmed my hypoxic culture conditions by measuring miR-210 expression after different durations of hypoxia (after 12, 24, 48, 72 and 96 hours) in both KMeC and LMeC cell lines. Interestingly, miR-210 was significantly upregulated after 24 hours in KMeC cells but after 48 hours in LMeC cells. Similarly, miR-301a was up-regulated earlier in KMeC cells (12 hours) than in LMeC cells (48 hours). The same expression pattern was also observed for miR-450b in KMeC cells and 146b in LMeC cells. It seems that the metastatic melanoma cell line, LMeC, is more resistant to hypoxia than the primary melanoma cell line, KMeC. These findings are consistent with the initiation of metastasis in hypoxic micro-environments [61, 62]. This

might be one reason why LMeC cells do not respond to short term (12 or 24 hour) hypoxia because they are already sensitized to hypoxia when they metastasized. Therefore, repeated measurement of miR-21, miR-450b, miR-301a and miR-146b can be prognostic for melanoma patients, although this needs further study. Moreover, early targeting of these miRNAs signaling pathways may be an effective approach to stop initiation of the metastatic cascade.

7. Conclusion

In this study, I determined the HRM signature in COM. Human database analysis showed that these miRNAs regulate several cancer-related pathways, including melanoma, corroborating their involvement in canine melanoma progression. Moreover, qRT-PCR validation indicated that miR-450b, miR-301a, and miR-146b could be prognostic markers and potential therapeutic targets for canine melanoma.

1. Figures and Tables

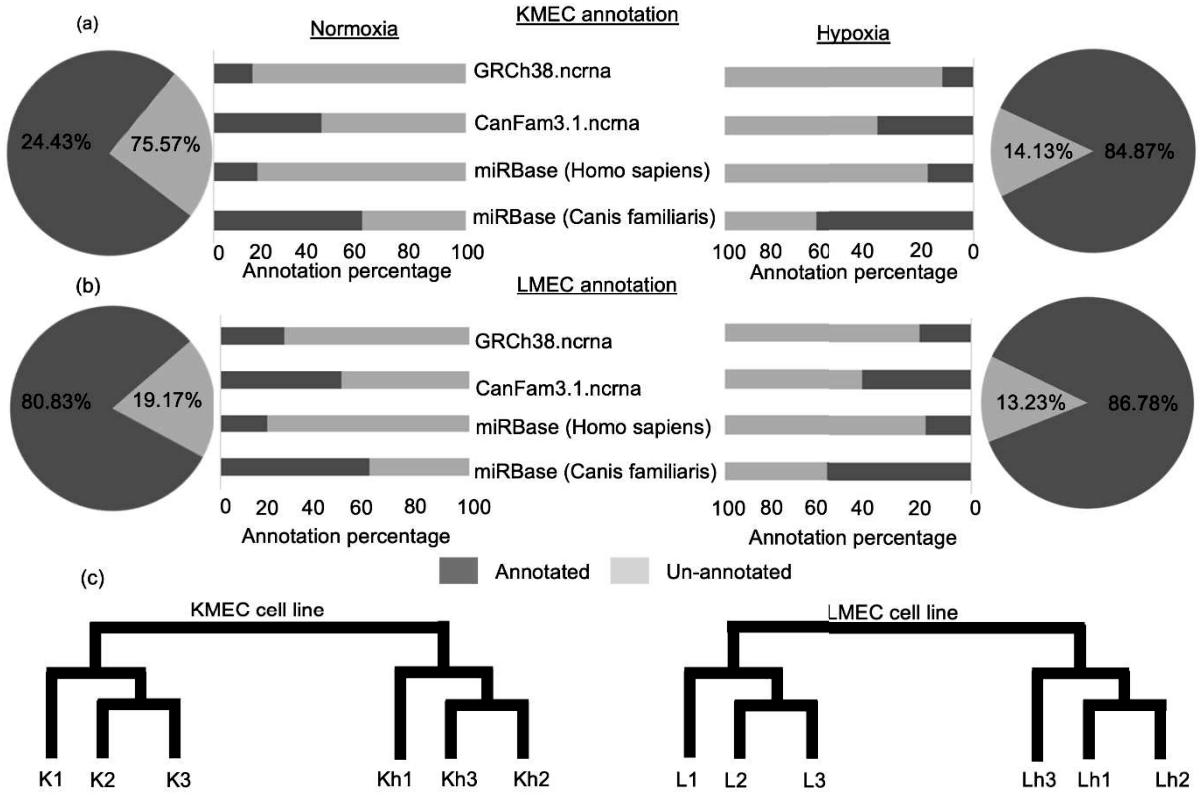

Figure 1. Sequence read annotation of the normoxic and hypoxic cell lines. a. Sequence read annotation details of normoxic and hypoxic KMeC cells. b. Sequence read annotation details of normoxic and hypoxic LMeC cells. Left panels show overall annotated and unannotated percentages; Right panels indicate the annotation percentages from different databases. c. Cluster analysis of hypoxic and normoxic KMeC and LMeC cells (Normoxic and Hypoxic; n=3). K: KMeC cell line in Normoxia, Kh: KMeC cell line in Hypoxia; L: LMeC cell line in Normoxia, Lh: LMeC cell line in Hypoxia

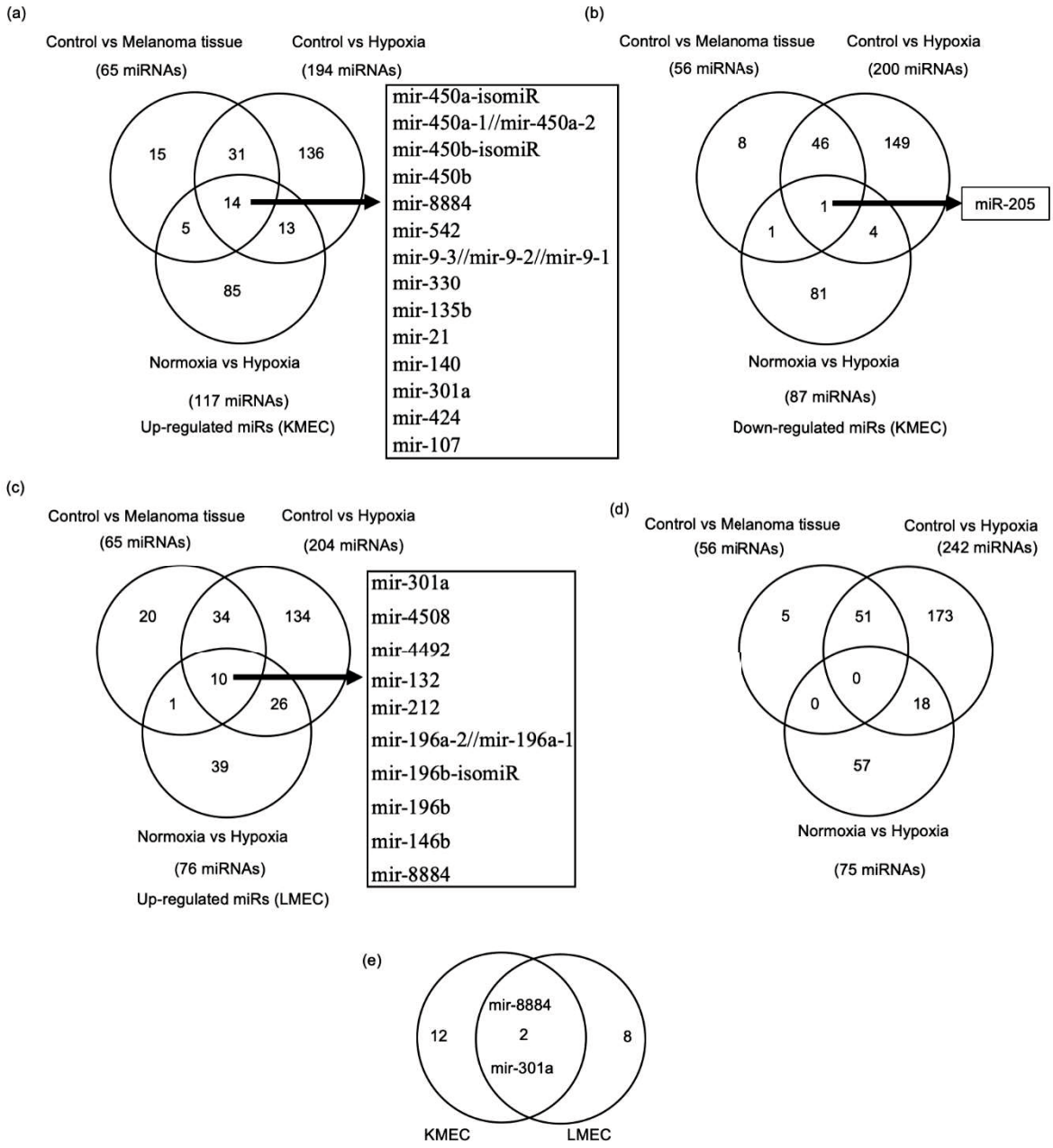

Figure 2. Hypoxia-regulated miRNAs (HRMs) in canine oral melanoma (COM). a–b. Hypoxia-related up- and down-regulated miRNAs in KMeC cells. c–d. Hypoxia-related up- and down-regulated miRNAs in LMeC cells. There were no down-regulated HRMs in the LMeC cell line. e. Common hypoxia-related up-regulated miRNAs in KMeC and LMeC cells. Hypoxia-related miRNAs that are shared between or among groups as are denoted by arrows. Numbers indicate the numbers of differentially expressed miRNAs in the respective comparisons.

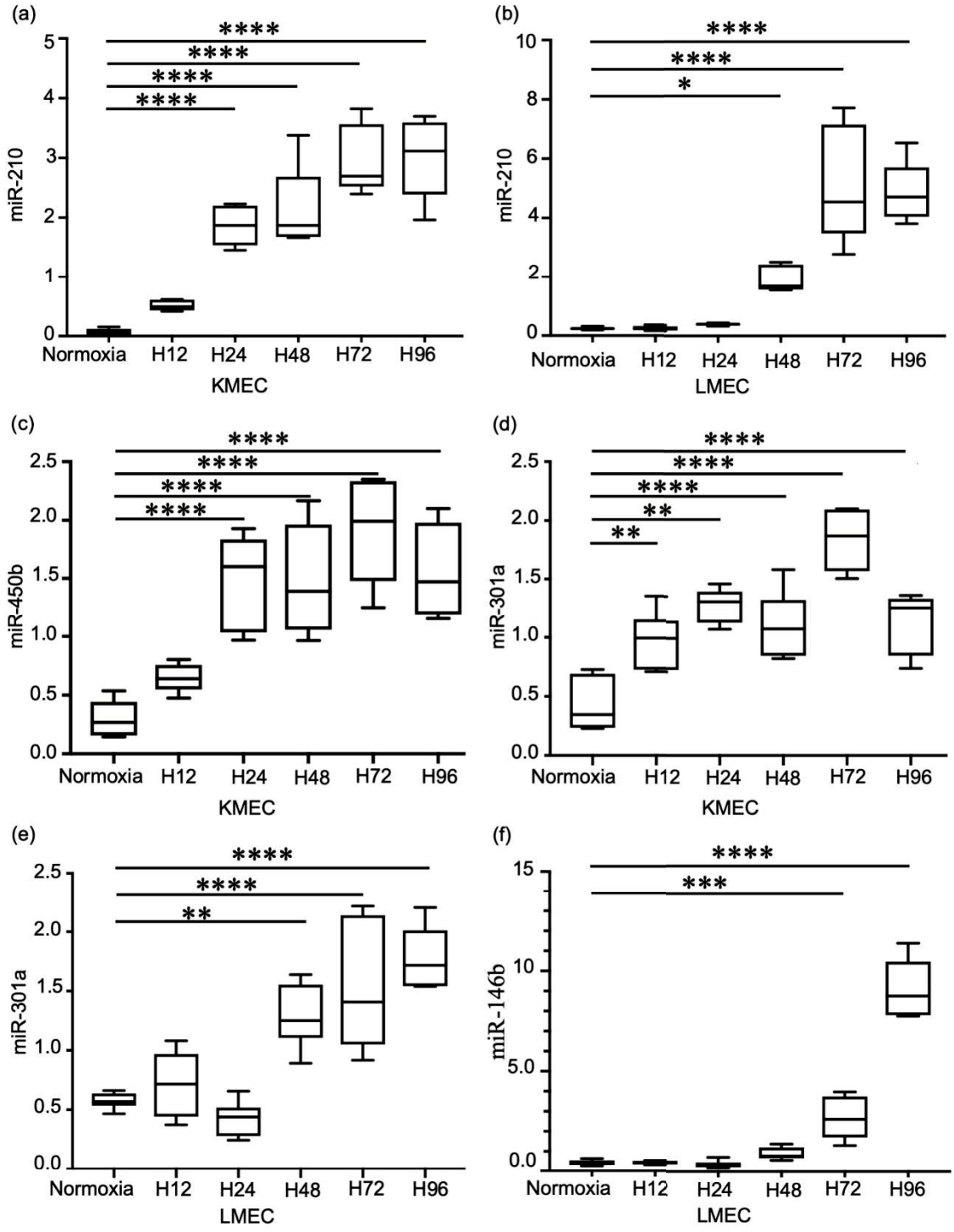

Figure 3. Reverse transcription-quantitative polymerase chain reaction validation of HRMs. a–b. Relative expression of miR-210 in KMeC and LMeC cells. c–d. Relative expression of miR-450b and miR-301a in KMeC cells. e–f. Relative expression of miR-301a and miR-146b in LMeC cells. Normoxia and hypoxia; n=6. ANOVA followed by Turkey's multiple comparison test. *P<0.05, **P<0.01, ***P<0.001, ****P<0.0001. The bars indicate standard deviation (SD)

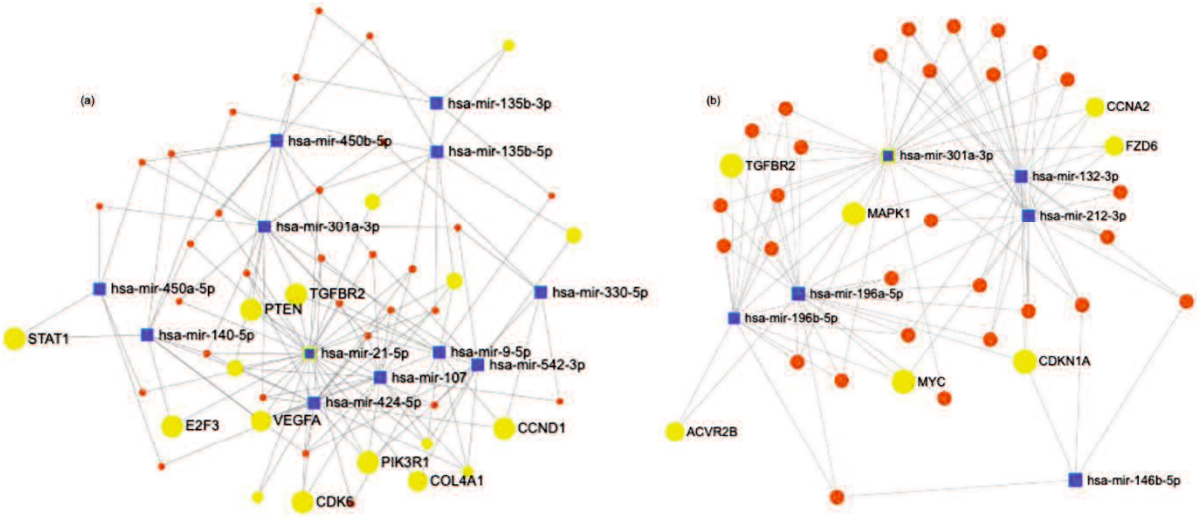

Figure 4. Regulatory network of HRMs generated using the human database, miRNet. a. KMeC-related HRM regulatory network. miR-21 is the hub node of the network. b. LMeC-related HRM regulatory network. miR-301a is the hub node of the network. Squares indicate miRNAs and circles indicate miRNA target genes. The miRNA or its target are nodes and a line between nodes is an edge, indicating that the interaction was experimentally validated. Yellow target genes indicate that they are significant in KEGG pathway analysis

Table 1A. KEGG pathway analysis of the KMeC-related up-regulated HRMs.

Pathway name	miRNA/gene hits	Adjusted P-value
Pathways in cancer	12	3.34E-08
Pancreatic cancer	7	2.74E-07
Small cell lung cancer	6	1.63E-05
Glioma	5	0.000108
Chronic myeloid leukemia	5	0.0001344
HTLV-I infection	7	0.0001344
Prostate cancer	5	0.0002601
Colorectal cancer	4	0.00042
Non-small cell lung cancer	4	0.0004736
p53 signaling pathway	4	0.0011167
Melanoma	4	0.0011167
Jak-STAT signaling pathway	4	0.0043413
Endometrial cancer	3	0.0045026
Focal adhesion	5	0.0065543
Cell cycle	4	0.0080907
Bladder cancer	2	0.0303863
Measles	3	0.0380882
Osteoclast differentiation	3	0.0546778

Table 1B. KEGG pathway analysis of the LMeC-related up-regulated HRMs.

Pathway name	miRNA/gene hits	Adjusted P-value
Chronic myeloid leukemia	4	0.0044
TGF-beta signaling pathway	4	0.0044
Colorectal cancer	3	0.0117
Pathways in cancer	5	0.0355
ErbB signaling pathway	3	0.0355
Epstein-Barr virus infection	3	0.0355
Thyroid cancer	2	0.0361
Bladder cancer	2	0.0361

Chapter 2

Hypoxia-Mediated Long Non-Coding RNA Fragment Identified in Canine Oral Melanoma through Transcriptome Analysis

1. Abstract

Hypoxia contributes to tumor progression and metastasis, and hypoxically dysregulated RNA molecules may, thus, be implicated in poor outcomes. Canine oral melanoma (COM) has a particularly poor prognosis, and some hypoxia-mediated miRNAs are known to exist in this cancer; however, equivalent data on other hypoxically dysregulated non-coding RNAs (ncRNAs) are lacking. Accordingly, I aimed to elucidate non-miRNA ncRNAs that may be mediated by hypoxia, targeting primary-site and metastatic COM cell lines and clinical COM tissue samples in next-generation sequencing (NGS), with subsequent qPCR validation and quantification in COM primary and metastatic cells and plasma and extracellular vesicles (EVs) for any identified ncRNA of interest. The findings suggest that a number of non-miRNA ncRNA species are hypoxically up- or downregulated in COM. I identified one ncRNA, the long ncRNA fragment ENSCAFT00000084705.1, as a molecule of interest due to its consistent downregulation in COM tissues, hypoxically and normoxically cultured primary and metastatic cell lines, when compared to the oral tissues from healthy dogs. However, this molecule was undetectable in plasma and plasma EVs, suggesting that its expression may be tumor tissue-specific, and it has little potential as a biomarker. Here, I provide evidence of hypoxic transcriptional dysregulation for ncRNAs other than miRNA in COM for the first time and suggest that ncRNA

ENSCAFT00000084705.1 is a molecule of interest for future research on the role of the transcriptome in the hypoxia-mediated progression of this aggressive cancer.

2. Introduction

Canine oral melanoma (COM) is regarded as one of the most aggressive tumors in dogs, and a hypoxic tumor microenvironment may be implicated in its highly aggressive nature. As a solid tumor, COM sees a fall in oxygen pressure. Crucially, hypoxia can cause the upregulation of tumorigenic factors and downregulation of anti-tumorigenic factors.

One promising line of COM research involves identifying elements of the transcriptome that may be dysregulated hypoxically. Changes in long non-coding RNA (lncRNA) profiles have been reported [63] in metastatic COM. Hypoxia is known to alter gene expression and RNA profiles within the tumor microenvironment [64], and dysregulated molecules may thus have the potential for utility as therapeutic targets or diagnostic biomarkers. I previously identified a number of molecules of interest based on dysregulated expression, which encompasses snoRNA, snRNA, piRNA, and tRNA fragments (tRFs) [65] in tumor tissue from COM patients. In further reports, I have highlighted dysregulated miRNAs [66], lncRNA, and tRFs [67] as exosomal biomarkers in plasma from COM patients. However, to the best of my knowledge, previous molecular investigations in COM have involved hypoxically dysregulated miRNAs [8] and Y-RNA [6]. A comprehensive understanding of the hypoxic mechanisms underlying COM progression and metastasis requires evidence from the entire RNA transcriptome. Thus, further investigations of non-coding RNAs (ncRNAs) other than miRNAs are needed. Recent advances in molecular analysis

technologies have added to the identification of transcriptome elements, with next-generation sequencing (NGS) playing a particularly important role in disease diagnosis and progression.

Against this background, I set out in this study to investigate the hypoxic mediation of non-miRNA ncRNAs in COM by identifying hypoxically deregulated ncRNAs through the comparative NGS analysis of primary-site and metastatic COM cell lines, COM tissue samples, and oral tissue from healthy dogs. Any ncRNA identified as a target of interest was then validated for its expression level using qPCR assays. Furthermore, I evaluated the target of interest as a potential biomarker by measuring its levels in plasma and plasma extracellular vesicles (EVs).

3. Ethics statement

Informed consent to use the specimens in this study was obtained from the dog patient's owners. This study was approved by the ethics committee of the Kagoshima University Veterinary Teaching Hospital (Approval No. KVH220001).

4. Materials and Methods

Study population (clinical samples)

Tumor tissue and blood samples were collected from dogs with COM undergoing treatment in the Kagoshima University Veterinary Teaching Hospital (KUVTH) or an affiliated veterinary clinic between 2014 and 2022. Oral melanoma tissue samples were collected from thirty dogs (n = 30). Among the 30 COM patients, twenty plasma samples (n = 20) were obtained. In addition, five control blood samples (n = 5) were collected from COM-free dogs. Definitive diagnoses were made after histopathological examination by certified pathologists employed by KUVTH. The study population and sample information are presented in Table 1. Briefly, the sample donors included 20 males and 10 females, with a median age of 12 years (range: 7–16 years), and were drawn mainly from small breeds. The healthy controls were beagles that had been purpose-bred for research at Shin Nippon Biomedical Laboratories, Ltd., Drug Safety Laboratories (Kagoshima, Japan).

Consent for sample collection was obtained from the owner of each dog. The tissue samples were transferred to RNAlater immediately after collection for storage. Blood samples were centrifuged to obtain plasma in accordance with my standard protocol. Blood samples were collected in tubes containing 3.2% of the sodium citrate anticoagulant and then centrifuged for 10 min at 3000× g immediately after collection to separate plasma from other cellular elements such as red blood cells (RBCs). The

supernatant was then carefully aspirated and subjected to additional high-speed centrifugation at 16,000× *g* for 10 min at 4 °C to remove residual cellular debris or platelets. Pure plasma was collected from the supernatant without disturbing the pellet. All samples were stored at −80 °C until analysis.

Cell lines and cell culture

KMeC and LMeC are canine oral melanoma cell lines originating from primary and metastatic tumor sites, respectively, and were preserved in a freezing medium (039-23511, CultureSure, Fujifilm Wako Pure Chemical Corporation, Osaka, Japan). The cell lines were cultured under previously described conditions [35]. In brief, cells were cultured in a medium containing Roswell Park Memorial Institute (RPMI) media-1640 (Gibco), 10% fetal bovine serum (BI, Biological Industries, Beit Haemek, Israel), 1% L-glutamine solution (Fujifilm Wako Pure Chemical Corporation, Osaka, Japan) and antibiotics (penicillin-streptomycin, Sigma; 100 units/mL of penicillin and 100 µg/mL of streptomycin). Cells were cultured (biological replicates/line: 6) in parallel under normoxic (5% CO_2, 21% O_2, 37 °C) or hypoxic (5% CO_2, 2% O_2, 37 °C) conditions for the specified duration.

A hypoxic environment was achieved using a hypoxic incubator (HeracellTM 150i, Thermo Fisher Scientific, Waltham, MA, USA). The culture medium was changed at 48 h intervals. Cells were grown until confluency. Cells were counted using an automated cell counter (LUNA-II™ automated cell counter, Annandale, Virginia, USA). Cell lysates were obtained at relevant time intervals, and RNA was subsequently extracted from each lysate for ncRNA expression analysis. Cell experiments were conducted twice to ensure reproducibility. To explore the impact of hypoxia on melanoma, cells were cultured for up to 96 h. I set the cell lysate collection times at 12, 48, and 96 h so as to mitigate any immediate effect of medium change.

EV isolation

EVs were isolated using the Total Exosome RNA and Protein Isolation Kit (Invitrogen, Waltham, MA, USA, Thermo Fisher Scientific) from plasma in accordance with the manufacturer's instructions and the procedure described earlier [67]. In summary, a 300 μL aliquot from the plasma sample was thoroughly mixed with a half-volume 1×PBS, followed by the addition of 90 μL of the exosome precipitation reagent. The resultant mixture was

thoroughly vortexed and then centrifuged at 10,000× *g* for 5 min. The supernatant was discarded to isolate the pellet containing the EVs. Subsequently, 150 μL of 1× PBS was added to resuspend the pellet, which was then stored at –80 °C until analysis.

RNA Isolation from Cells, Plasma, and Plasma EVs

Total RNA was extracted from the COM cells and tissues using a mirVana™ miRNA Isolation Kit (Thermo Fisher Scientific, Vilnius, Lithuania) and from plasma and plasma EVs using a mirVana PARIS Kit (Thermo Fisher Scientific, Vilnius, Lithuania), following the instructions provided by the manufacturer. Prior to RNA extraction, 5 μL of synthetic cel-miR-39 was mixed with each plasma or plasma-derived EV sample in order to normalize the differences in expression. Briefly, each cell lysate or plasma sample was mixed with an equal amount of the 2× denaturation solution. The miRNA homogenate was added at a ratio of 10:1, and the mixture was then incubated at 4 °C for 10 min, after which acid–phenol/chloroform (Ambion LTD, Huntingdon, Cambridgeshire, UK) was added at a volume equal to that of the initial cell lysate. The resultant mixture was vortexed thoroughly and then

centrifuged at 15,000× *g* for 5 min at 25 °C. After centrifugation, the supernatant was carefully removed and mixed with 1.25 volumes of ethanol (99.9% purity) in an Eppendorf tube. The tube was then centrifuged using the spin column provided with the kit to trap the RNA particles on the filter paper. Finally, RNA was eluted from the filter membrane by the elution solution pre-heated to 95 °C. The concentration of total RNA was measured using the NanoDrop 2000c spectrophotometer (Thermo Fisher Scientific, Wilmington, Delaware, USA). RNA quality and integrity were assessed using an Agilent 2100 Bioanalyzer (G2939BA, Agilent Technologies, Santa Clara, CA, USA). The RNA Integrity Numbers (RINs) for the cell samples ranged from 8.5 to 9.5.

Next-Generation Sequencing

NGS targeting total RNA was commissioned by a specialist genetics analysis laboratory (Hokkaido System Science, Hokkaido, Japan) and conducted as described previously [8]. Briefly, small RNA libraries were prepared using the TruSeq Small RNA Library preparation kit from 1 μg of total RNA, following the manufacturer's instructions (Illumina, San Diego, CA). Adapters (5′ and 3′) were then ligated to the small RNAs, and cDNA was synthesized using reverse transcription, followed by substantial amplification. The amplified cDNA was subjected to gel electrophoresis to

check its purity and then sequenced using an Illumina/Hiseq2500 system by Hokkaido System Science (Hokkaido, Japan). The sequencing yielded high-quality reads with Phred scores >35. Finally, the sequences were stored in the NCBI Sequence Read Archive (SRA) database with the accession number PRJNA629070.

NGS data were obtained from the analyses of canine oral healthy tissue (control tissues, n = 3), clinical COM tissue (n = 8), and KMeC and LMeC cell lines (n = 3 biological replicates for each cell line in either normoxic or hypoxic conditions, cultured for 48 h), under normoxic and hypoxic conditions. The sequence reads were stored in the Sequence Read Archive (SRA) (www.ncbi.nlm.nih.gov/sra, accessed on 11 March, 2023) with the accession number PRJNA629070. A summary of the NGS data analysis has already been documented in previous studies [8]. NGS data were trimmed, quality checked, and underwent subsequent analysis, as described in earlier studies [6, 8]. miRBase and Ensembl databases were utilized to annotate the reads. All cell line replicates were clustered together under normoxic and hypoxic conditions, suggesting they are appropriate for further differential expression analysis [8].

Bioinformatic Analysis

NGS reads were examined using the CLC Genomics Workbench, V10.0 and 12.0, in accordance with the developer's instructions (https://digital insights.qiagen.com, CLC Bio, Qiagen, Germany, accessed on 15 March,

2023). The final analysis preceded adapter trimming, QC checking, and the sorting of ambiguous reads. Parameters were set as the recommended defaults for all analysis runs. Initially, adapters and low-quality, ambiguous reads were removed. Small RNA sequences were extracted and counted from the clean reads. Subsequently, the annotation of the extracted reads was obtained using miRBase and canine and human non-coding RNA databases from ENSEMBL (Canis_familiris/canfam3.1.ncrna and Homo_sapiens/GRCh37.ncrna). A previous study from my laboratory reported miRNAs annotated from miRbase [8]. Non-miRNA ncRNAs were investigated in this study. Sequence counts were regarded as the expression values for ncRNAs. The empirical analysis of differential gene expression (EDGE) was used to identify any significantly dysregulated ncRNAs based on the following criteria: FDR p-value < 0.05, |FC| > 2, and minimum expression > 10 [mature count] per replicate.

qPCR

The expression level of the target ncRNA was measured using TaqMan gene expression assays (Thermo Fisher Scientific, Waltham, Massachusetts, USA). qPCR was performed following previously described procedures [6]. First, cDNA was prepared from 2 ng of the RNA sample using a TaqMan MicroRNA Reverse Transcription kit following the manufacturer's protocol (4366597, Thermo Fisher Scientific, Vilnius, Lithuania). In the next step, qPCR was performed with a StepOnePlus real-time PCR system (Thermo

Fisher Scientific, Woodlands, Singapore) using a TaqMan Fast Advanced Master Mix kit (4444557, Thermo Fisher Scientific, Vilnius, Lithuania). The thermocycling conditions for qPCR were as follows: 50 °C for 2 min, 95 °C for 20 s, followed by 40 cycles of 1 s denaturation at 95 °C and 20 s annealing/extension at 60 °C. RNU6B, miR-16, and miR-186 were used as internal controls for the evaluation of the relative expression of the targeted ncRNA molecule in cell lines, plasma, and plasma EVs, respectively [66]. The final expression level was calculated following the $2^{-\Delta\Delta CT}$ method [37]. A qPCR test providing a cycle threshold (Ct) value greater than 35 was regarded as undetected for that specified sample. All qPCR assays were performed twice to confirm their reproducibility. Expression values of the control miRNAs (miR-16 for plasma and miR-186 for plasma EVs) were evaluated using TaqMan microRNA assays. The primer IDs for the internal controls were RNU6B: 001093, miR-16: 000391, and miR-186: 002285. Information on each primer can be found at https://www.thermofisher.com/order/genome-database/. Primers for the selected ncRNA (Ensembl ID; ENSCAFT00000084705.1; sequence: 5′-ATTCCTGGACTCACGGATACT-3′) was custom-designed.

Statistical Analysis

Differences between groups were statistically assessed using the Kruskal–Wallis test and Mann–Whitney U test to evaluate the relative expression of the target ncRNA. A statistical test with a *p*-value of less than

0.05 ($p < 0.05$) was considered significant. All statistical analyses and graph visualizations were conducted using GraphPad Prism 9 (https://www.graphpad.com/).

5. Result

NGS Profiling of Hypoxia-Mediated ncRNAs

To initially determine ncRNAs that are differentially expressed in clinical COM tissue, and primary-site (KMeC) and metastatic (LMeC) COM cells versus healthy oral tissue, and in hypoxic versus normoxic KMeC and LMeC cells, I applied stringent filtering criteria to NGS reads (FDR *p*-value < 0.05, |FC| > 2, and minimum expression > 10 [mature count] per replicate), and listed the ncRNAs thus classified as upregulated or downregulated. The numbers of differentially expressed ncRNAs for all comparisons are shown in Figure 1.

Focusing on hypoxia versus normoxia comparisons in COM cells, I identified 928 and 1367 hypoxically dysregulated ncRNAs for KMeC and LMeC cells, respectively. For KMeC cells, 242 of these ncRNAs were upregulated, and 686 were downregulated, and for LMeC cells, 266 were upregulated, and 1101 were downregulated (Figure 1, Apendix). These findings suggest that hypoxia mediates ncRNA expression in COM.

Identification of Target ncRNAs

To identify ncRNAs of interest, I then subjected data on differentially expressed ncRNAs to Venn diagramming to find any molecules showing a consistent pattern across clinical COM tissue and COM cell lines. Comparing the expression between hypoxia and normoxia in cell lines may not lead to the sufficiently robust identification of target molecules because

of the possibility for developing unintended hypoxia in the cultured cells. Accordingly, I set out to identify hypoxically dysregulated, melanoma-specific target ncRNAs, which were commonly up- or down-regulated in clinical COM tissue, hypoxic KmeC, and LMeC cells versus healthy oral tissue, and hypoxic KMeC and LMeC cells versus normoxically cultured equivalents. Target ncRNAs were identified as those in the intersection of three comparisons in the relevant Venn diagram. The results are visually presented, separating upregulated and downregulated ncRNAs in Figure 2, with a full breakdown of numbers in Appendix.

Although 16 ncRNAs were commonly upregulated in clinical COM tissue and hypoxic KMeC or LMeC versus healthy oral tissue or the relevant normoxic cells, none of them satisfied the criterion for selection as a target ncRNA because they were not upregulated in LMeC (metastatic) vs. KMeC (primary site) COM cells.

By contrast, one ncRNA (ENSCAFT00000084705.1) was commonly downregulated in COM tumor tissue and hypoxic KMeC or LMeC versus healthy oral tissue or the relevant normoxic cells in NGS (Figure 2) and, thus, satisfied the criteria for selection as a target ncRNA based on downregulation in LMeC vs. KMeC cells. The relative expression levels of the target ncRNA (ENSCAFT00000084705.1) across all types of NGS samples are depicted in Figure 3.

qRT-PCR Validation of Downregulated ncRNA (ENSCAFT00000084705.1)

Relative Expression in Hypoxic KMeC and LMeC Cells

To validate my NGS findings, I investigated the expression of ENSCAFT00000084705.1 at three different time intervals (12, 48, and 96 h) in hypoxic KMeC and LMeC cells. The expression level decreased significantly ($p < 0.05$) in both cells at 48 and 96 h under hypoxic conditions compared to 12 h (Figure 4A, B). Moreover, expression significantly differed ($p < 0.01$) between LMeC and KMeC cells at 96 h (Figure 4C), showing a non-significant trend that was similar at 48 h ($p > 0.05$). Accordingly, ENSCAFT00000084705.1 expression appeared to decrease progressively with hypoxia, and the magnitude of this decrease was greater in metastatic (LMeC) cells compared to primary-site (KMeC) cells.

Relative Expression in Plasma and Plasma-Derived EVs

I further examined the expression of ncRNA in plasma and plasma-derived EVs from clinical COM patients. Although the internal control (miR-186) was detectable in plasma EVs, ENSCAFT00000084705.1 was undetectable in both plasma and plasma EVs (Figure 5). The cycle threshold (Ct) values during qPCR validation surpassed 35, failing to meet the criteria for my experimental conditions. Thus, my results imply that ENSCAFT00000084705.1 was either absent or minimally expressed in plasma and plasma EVs.

6 . Discussion

In this study, I aimed to build on previous research on RNA molecules, evaluate the expression of ncRNAs other than miRNAs in COM, and investigate their links to hypoxia, which may be heavily implicated in the progression and metastasis of this cancer. To the best of my knowledge, this is the first report on such hypoxic dysregulation of non-miRNA ncRNAs.

In the initial findings of my study, I demonstrated transcriptional dysregulation for non-miRNA ncRNAs, with 928 (242 up and 686 downregulated) and 1367 (266 up and 1101 downregulated) relevant molecules in hypoxically cultured KMeC and LMeC cells, versus their normoxic counterparts, respectively, based on NGS results. Lou et al. (2024) similarly revealed the dysregulation of ncRNAs due to hypoxia, identifying 2455 hypoxia-induced lncRNAs from the human breast cancer dataset [68]. Thus, the expression of ncRNAs appears to be linked with hypoxic dysregulation. Moreover, the number of dysregulated ncRNAs was greater in metastatic than primary-site COM cells, suggesting these species might exhibit greater efficacy in coping with hypoxic cellular stress in the metastatic stage.

As this study is the first to investigate hypoxia-regulated ncRNAs in COM, the findings cannot be compared to those from previously conducted studies involving patients of different ages, breeds, or geographical locations. However, the findings for non-miRNA ncRNAs from the present study broadly reflect the extent of dysregulation I previously identified for

miRNAs in comparable screening experiments [8]. The functional relationships between miRNAs and other ncRNAs have yet to be elucidated; however, considering that hypoxia is known to alter gene expression in multiple ways [69-71], my findings may indicate that RNA molecules across the whole transcriptome are affected by or may interact in some way with a hypoxic tumor microenvironment. I consider that non-miRNA ncRNAs are thus also of potential interest to veterinary oncologists seeking to better understand why COM is such an aggressive cancer.

From among the hypoxically dysregulated ncRNAs, I then set out to find molecules of interest that showed a broadly consistent pattern, either upregulation or downregulation, across the COM cell lines and tumor tissue samples in comparison with healthy oral tissue. COM tumor tissue samples were included in these comparisons to safeguard against misidentifying a transcriptome element as dysregulated due to any unintended hypoxia that might occur during cell culture. As a very aggressive, solid cancer, COM develops hypoxic microenvironments quickly, which plays a role in metastasis [72, 73]. Thus, the final part of the consistent pattern I were seeking involved the trend of upregulation or downregulation being evident in the metastatic cell line versus the primary-site cell line (LMeC vs. KMeC cells). Eventually, I were only able to identify one candidate ncRNA (ENSCAFT00000084705.1), which was commonly downregulated in every relevant comparison (no candidate satisfied the criteria for the upregulation pattern). These findings differ

somewhat from my previously reported results with miRNAs, where I found 15 (14 upregulated and 1 downregulated) commonly and hypoxically dysregulated miRNAs in COM [9] evaluated with the same criteria used in this study. Taken together, these results may tentatively indicate that miRNA species show sensitivity to a hypoxic microenvironment in greater numbers than other ncRNA species, but considerable further research is needed.

Although ENSCAFT00000084705.1 was the sole target ncRNA I identified, its association with hypoxia appears robust. This ncRNA was downregulated in COM cells and tumor tissue versus healthy oral tissue and in hypoxic cells versus normoxic cells. Furthermore, its downregulation in metastatic cells was consistent with a progressive trend of downregulation as COM, an aggressive cancer with a high propensity to metastasize, progresses. I were able to validate my NGS findings for this ncRNA in PCR assays with KMeC and LMeC cells and demonstrated a chronologically progressive downregulation of greater magnitude in metastatic cells. I thus speculate that ENSCAFT00000084705.1 plays a distinct and important role in the hypoxic COM microenvironment that is linked to tumor progression and metastasis [74, 75]. Hypoxia is known to cause the downregulation of anti-tumorigenic factors like p53, dicer, e-cadherin, and so on [76-78], indicating that ENSCAFT00000084705.1 may have a role in the development of future therapeutic strategies.

Having established ENSCAFT00000084705.1 as an ncRNA of interest, I then set out to evaluate its level in plasma and plasma EVs. As EVs may

carry cargo from tumor cells to other regions in the body [79], their target molecule concentrations may reveal any potential role in the spread of a tumor beyond its primary site [80]. However, ENSCAFT00000084705.1 proved almost undetectable in plasma and plasma EVs in qPCR assays, and I deduced that it is either absent or minimally expressed in these matrices. Its expression could, thus, appear to be tissue-specific, and I regard ENSCAFT00000084705.1 as having little promise as a biomarker for COM generally or for metastatic versus non-metastatic COM. This contrasts with my findings in a previous study on another lncRNA (ENSCAFT00000069599.1), which I suggested is a potential exosomal biomarker for differentiating COM cases from healthy dogs [67].

My findings add to the understanding of the transcriptional factors in COM. Transcriptome analysis is typically further advanced in humans compared to canine medicine. It is now well established that non-coding RNAs are implicated in the initiation and progression of a number of human cancers, with hypoxic tumor microenvironments suggested to play a role in many cases, with the modulation of the hypoxia/HIF pathway being one part of a possible mechanism [81]. Aberrant lncRNA expression has also been found in human melanoma [82], for which it has been implicated in tumor formation and progression [83]. Even though thousands of lncRNAs have been identified in dogs [63], their role in canine cancers remains poorly understood, and few have been pinpointed for roles in COM. My identification of ENSCAFT00000084705.1 as a

hypoxia-mediated ncRNA is, thus, a useful addition to a still relatively small base of evidence.

The current study has a number of limitations. Firstly, the hypoxic levels of the tissue samples used for NGS analysis were not investigated. However, I believed that the tumor mass was large enough to develop a hypoxic condition inside it. Secondly, clinical validation was conducted with a relatively small population, and my findings on target ncRNA thus require further validation with a larger sample size to draw more robust conclusions. Furthermore, my control dogs were not matched by age, sex, or breed with the main study population. Further studies are needed to validate the clinical usefulness with an increased sample size in which control dogs reflect the age range, sex distribution, and range of breeds in the tumor-bearing population. Finally, there is a need to explore the genes targeted by this lncRNA and their associated signaling pathways. Additionally, investigating the underlying molecular mechanisms and functional role of ENSCAFT00000084705.1 in melanoma development and progression is essential.

7. Conclusion

The present study investigated hypoxically dysregulated non-miRNA ncRNAs from COM for the first time, and eventually, my findings revealed that hypoxia may contribute to the dysregulation of ncRNA expression in COM. My results here allowed us to identify one ncRNA, ENSCAFT00000084705.1, as a hypoxia-mediated factor in COM. Although it may lack potential as a diagnostic biomarker, I consider that ENSCAFT00000084705.1 is a molecule of interest for future studies on this aggressive cancer in dogs.

8. Figures and Table

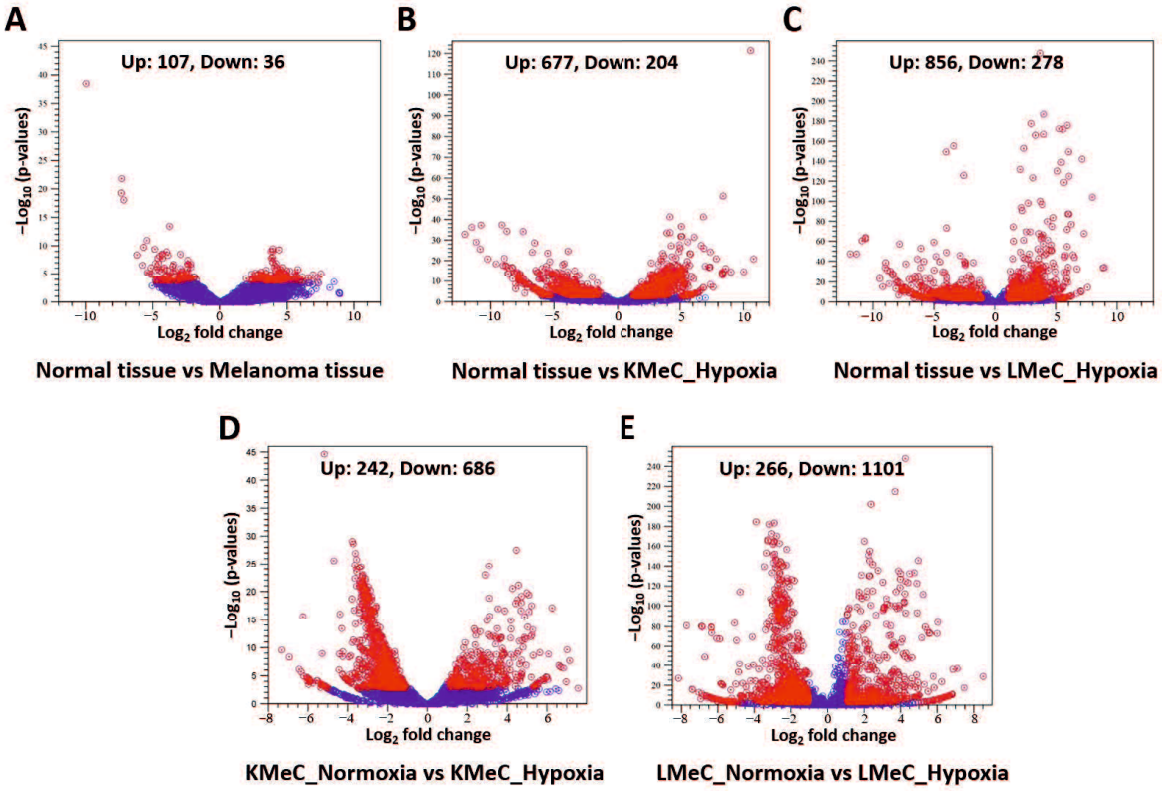

Figure 1. Differentially expressed ncRNAs (except miRNAs) in melanoma tissues and cell lines. (**A–E**) Volcano plot of differentially expressed upregulated and downregulated ncRNAs (except miRNAs) in normal vs. COM tissue (**A**), normal tissue vs. KMeC_hypoxia (**B**), normal tissue vs. LMeC_hypoxia (**C**), KMeC_normoxia vs. KMeC_hypoxia (**D**), and LMeC_normoxia vs. LMeC_hypoxia (**E**). Red dots represent up- and downregulated ncRNAs, and blue dots represent ncRNAs that were not differentially expressed.

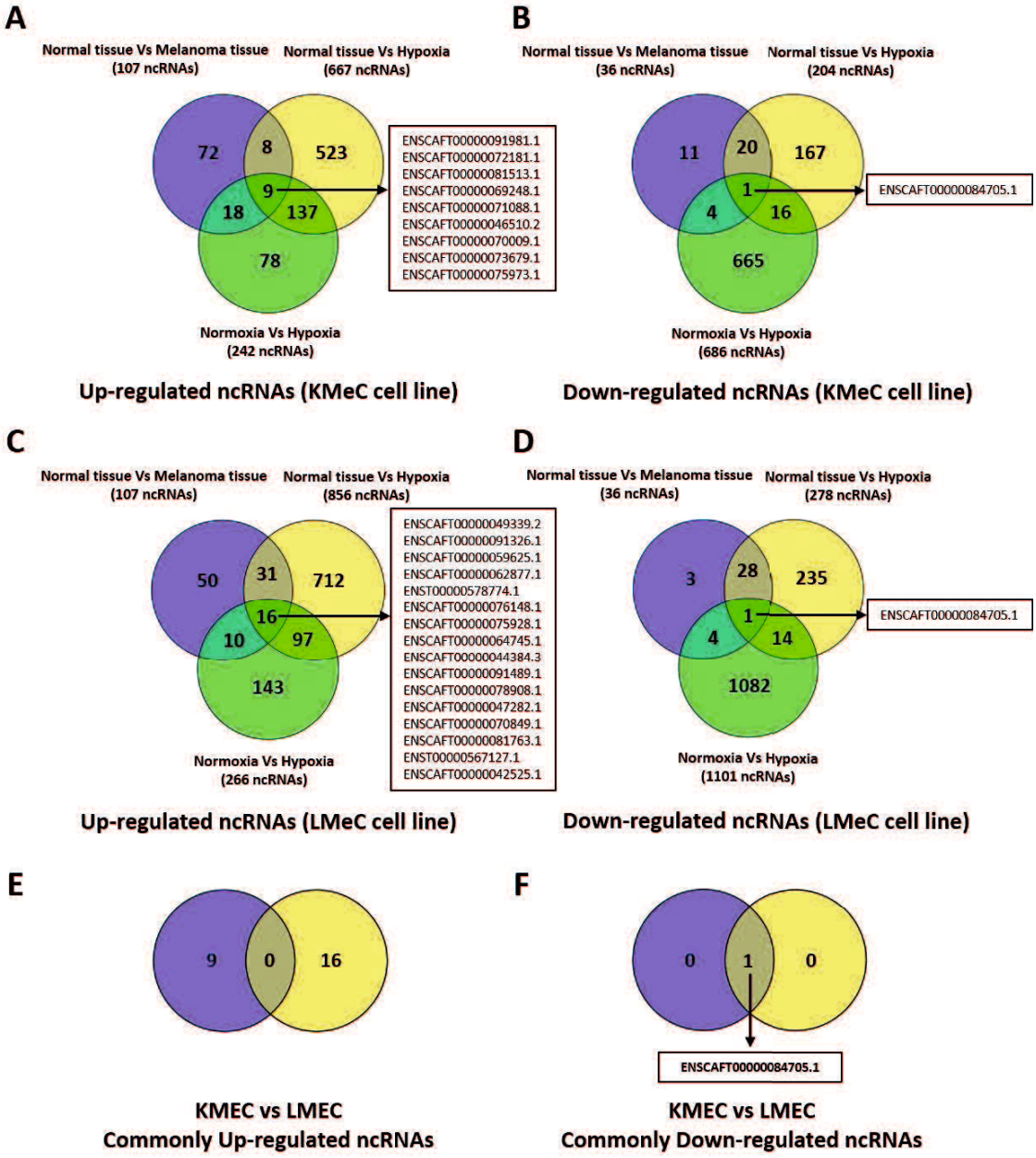

Figure 2. Hypoxia-regulated ncRNAs (except miRNAs) in canine oral melanoma (COM). (**A**,**B**) Venn diagram showing hypoxia-regulated up- and downregulated ncRNAs in KMeC cells. (**C**,**D**) Hypoxia-regulated up- and downregulated ncRNAs in LMeC cells. (**F**) Hypoxia-induced commonly expressed downregulated ncRNAs in both cells. No upregulated ncRNAs were commonly expressed in both cell lines (**E**). Number in the Venn diagram indicate the numbers of dysregulated ncRNAs, whereas the arrows indicate corresponding lists of ncRNAs shared between or among the groups

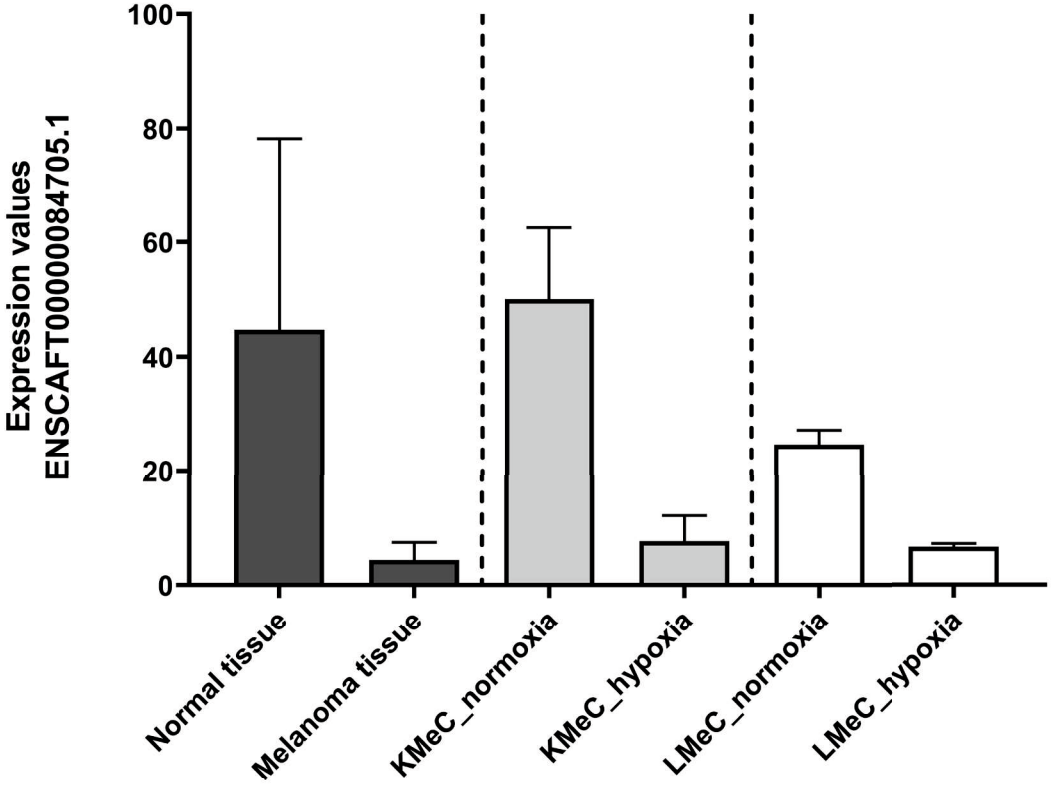

Figure 3. Expression levels of the targeted ncRNA (ENSCAFT00000084705.1) in healthy oral tissue ($n = 3$), melanoma tissue ($n = 8$), normoxic KMeC cells ($n = 3$), hypoxic KMeC cells ($n = 3$), normoxic LMeC cells ($n = 3$), and hypoxic LMeC cells ($n = 3$) in NGS data.

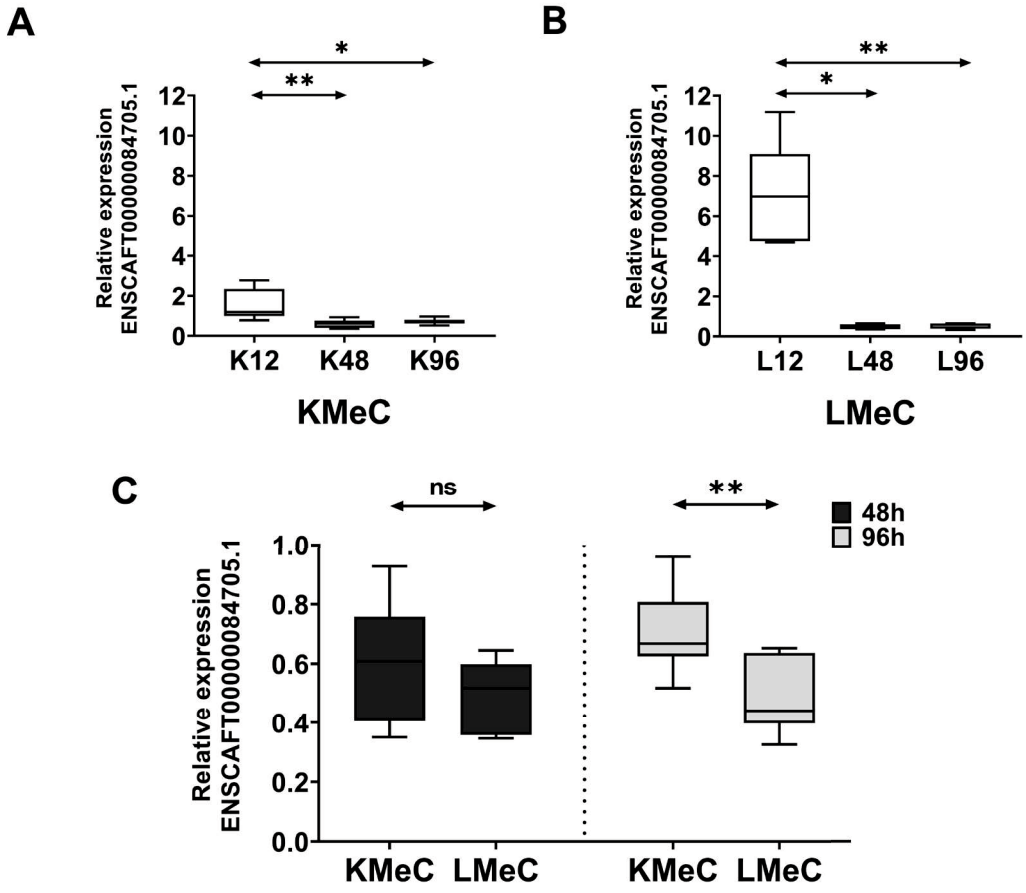

Figure 4. Relative expression of targeted ncRNA (ENSCAFT00000084705.1) at different time intervals in hypoxic KMeC and LMeC cells identified by qRT-PCR. Relative expression of ENSCAFT00000084705.1 at 12, 48, and 96 h in hypoxic KMeC cells (n = 6, for each time point) (**A**) and LMeC cells (n = 6, for each time point) (**B**). (**C**) Relative expression level of targeted ncRNA (ENSCAFT00000084705.1) between primary (KMeC, n = 6) and metastatic (LMeC, n = 6) COM cell lines under hypoxic conditions. The dark grey color box indicates the relative expression level of ENSCAFT00000084705.1 in KMeC and LMeC cells after 48 h, and the light grey color represents the expression levels after 96 h. The y-axis in the graph indicates the relative expression levels of ENSCAFT00000084705.1. The difference between each time point in both cells was analyzed using the Kruskal–Wallis test, whereas the Mann–Whitney U test was utilized to statistically analyze the difference between KMeC and LMeC cells at different time intervals. A p-value of less than 0.05 ($p < 0.05$) was considered statistically significant. * denotes a significant test (* = $p < 0.05$ and ** = $p < 0.01$); ns = non-significant tes

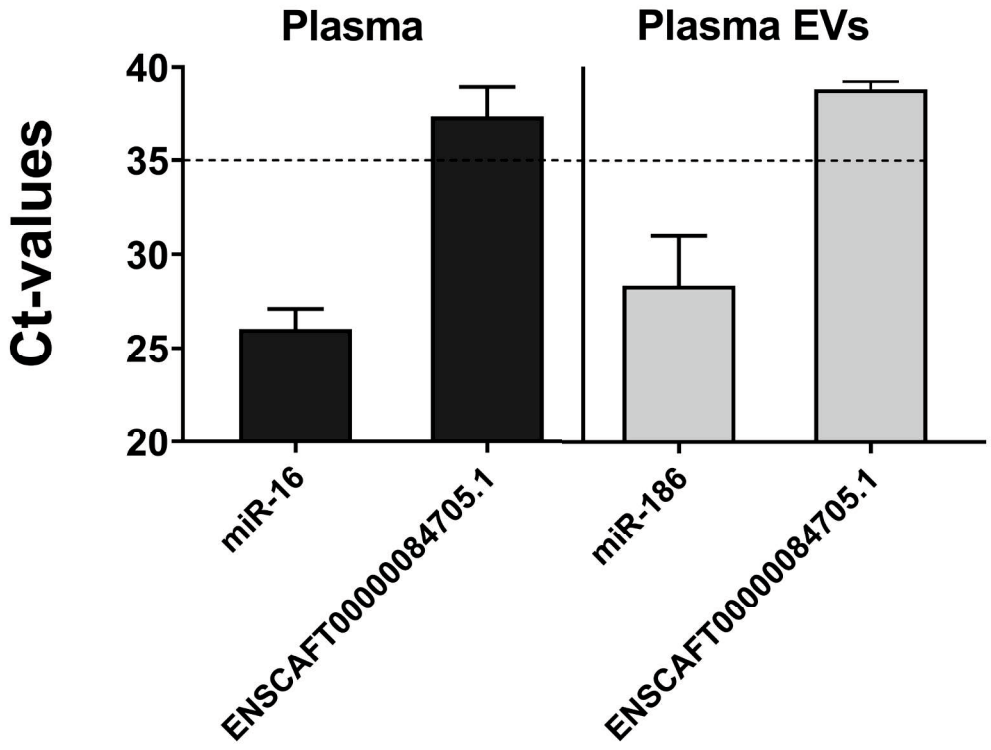

Figure 5. Relative expression of targeted ncRNA (ENSCAFT00000084705.1) in plasma and plasma EVs identified by qRT-PCR. The *y-axis* in the graph indicates the cycle threshold (Ct) values of miR-16 (internal control for plasma, $n = 5$) and ENSCAFT00000084705.1 ($n = 20$) in plasma samples, and miR-186 (internal control for plasma EVs, $n = 5$) and ENSCAFT00000084705.1 ($n = 11$) in plasma EVs. The average Ct value of ENSCAFT00000084705.1 was observed higher than 35 in both plasma and plasma EVs samples.

Table 1. Canine oral melanoma tissue and plasma sample information.

No	Age (Years)	Sex	Breed	Tumor Stage	Metastasis Status	Types of Samples
1	13.3	Male	M.D.	I	—	Tissue, Plasma
2	10.3	Male	Yorkshire	IV	—	Tissue, Plasma
3	10.2	Male	Chiwawa	IV	P	Tissue, Plasma
	12.7	Male	M.D.	IV	P	Tissue, Plasma
5	14.8	Male	Mongrel	IV	P	Tissue, Plasma
6	10	Male	Golden Retriever	IV	—	Tissue, Plasma
7	10.11	Male	M.D.	I	—	Tissue
8	7.11	Male	M.D.	I	—	Tissue, Plasma
9	10.9	Male	M.D.	IV	—	Tissue, Plasma
10	12	Male	Shiba	IV	P	Tissue
11	13	Male	Pomerania	I	—	Tissue
12	16.3	Male	M.D.	IV	P	Tissue, Plasma
13	11	Male	M.D.	IV	P	Tissue, Plasma
14	12	Male	Mongrel	I	—	Tissue, Plasma
15	11.1	Male	M.D.	IV	P	Tissue, Plasma
16	15.6	Male	Pomeranian	II	P	Tissue, Plasma
17	12.11	Male	M.D.	IV	P	Tissue
18	12.4	Male	Shiba	IV	P	Tissue
19	10.8	Male	M.D.	IV	—	Tissue
20	15.2	Male	Shiba	I	—	Tissue
21	12.4	Female	M.D.	IV	—	Tissue, Plasma
22	14.6	Female	M.D.	II	P	Tissue
23	15.2	Female	Mongrel	IV	—	Tissue
24	15.2	Female	Mongrel	IV	P	Tissue
25	8.2	Female	M.D.	IV	P	Tissue, Plasma
26	15.3	Female	Mongrel	I	—	Tissue, Plasma
27	15.3	Female	Mongrel	I	—	Tissue, Plasma
28	11.8	Female	M.D.	I	—	Tissue, Plasma
29	14	Female	Dalmatian	II	P	Tissue, Plasma
30	12.1	Female	Toy poodle	IV	P	Tissue, Plasma

(M.D.) indicates “Miniature Dachshund”, (P) indicates “Present”, and (–) indicates “Absent”.

Conclusion

This dissertation elucidates the critical roles of hypoxia-regulated non-coding RNA molecules in canine oral melanoma, shedding light on both microRNAs and long non-coding RNAs as crucial players in hypoxia-driven oncogenic pathways. Chapter 1 highlights miR-21, miR-210, and miR-301a as central regulators in these pathways, while Chapter 2 introduces the long non-coding RNA ENSCAFT00000084705.1 as a promising tumor-specific regulator of hypoxia-mediated COM progression. These findings underscore the intricate interplay between the tumor microenvironment and non-coding RNA-mediated gene regulation, providing valuable insights into the biology of COM.

This research advances my understanding of hypoxia-driven mechanisms in COM progression and opens new avenues for developing diagnostic and therapeutic strategies. By exploring these non-coding RNAs' mechanisms and potential applications, this study underscores their potential as biomarkers and therapeutic targets in veterinary and comparative oncology.

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Finally, and for most, I would like to especially thank my family for always help to my life.

Appendix

Ch.1: Sequencing reads, phred score and annotation of the hypoxic and normoxic cell lines.

Cell line	Reads	Phred score	Annotation (% reads)
K1	20578936	38.40	75.6
K2	26947712	38.43	75.0
K3	26811454	38.51	76.1
Kh1	27484221	38.30	80.4
Kh2	27650748	38.37	87.2
Kh3	27139325	38.42	87.0
L1	20242695	35.22	81.0
L2	20191470	35.26	80.7
L3	19478991	35.11	80.8
Lh1	20835450	35.38	86.7
Lh2	20692346	35.42	86.8
Lh3	22329835	35.34	86.8

K, KMEC; Kh, KMEC hypoxia; L, LMEC; Lh, LMEC hypoxia

Ch.1: Differentially expressed up-regulated miRNAs between KMEC normoxic and hypoxic cell lines.

Sequence	miRNA	Species	Strand	Fold Change	FDR
TTTGGTCCCCTTCAACCAGCTG	mir-133a-1//mir-133a-2	Homo sapiens	Mature 3'	3499.075648	1.704E-25
AGCTGGTAAAATGGAACCAAAT	mir-133a-1//mir-133a-2	Homo sapiens	Mature 5'	269.2276946	5.926E-08
GCGACCCACTCTTGGTTTCCA	mir-551a	Canis familiaris	Mature 3'	132.6151021	7.419E-15
CTGTATGCCCTCACCGCTCA	mir-675	Homo sapiens	Mature 3'	126.0330761	1.19E-15
AATCATACAGGGACATCCAGTT	mir-487a	Homo sapiens	Mature 3'	86.13747955	0.0004386
CGGCAACAAGAAACTGCCTGAG	mir-196a-2	Homo sapiens	Mature 3'	68.7389299	0.0032948
TTGGTCCCCTTCAACCAGCTG	mir-133c	Canis familiaris	Mature 3'	58.98872773	4.616E-23
TTGGTCCCCTTCAACCAGCTGT	mir-133a	Canis familiaris	Mature 3'	56.48148892	4.312E-25
CCCAGTGTTTAGACTATCTGTTC	mir-199b	Homo sapiens	Mature 5'	48.51186237	5.355E-20
TTAATATCGGACAACCATTGT	mir-889	Homo sapiens	Mature 3'	26.88133861	7.112E-06
GTGCATTGCTGTTGCATTGC	mir-33b	Canis familiaris	Mature 5'	25.88697353	9.469E-08
TGGAATGTAAAGAAGTATGTAT	mir-1-2//mir-1-1	Homo sapiens	Mature 3'	25.68967947	5.833E-05
AGGTTACCCGAGCAACTTTGCAT	mir-409	Homo sapiens	Mature 5'	22.38474321	1.124E-08
TCGACCGGACCTCGACCGGCT	mir-1307	Homo sapiens	Mature 5'	20.33440504	1.194E-06
AATATTATACAGTCAACCTCT	mir-656	Homo sapiens	Mature 3'	19.84791671	0.0009488
GTGCATTGTAGTTGCATTGCA	mir-33a	Homo sapiens	Mature 5'	19.26076242	7.386E-05
TTCAACGGGTATTTATTGAGCA	mir-95	Canis familiaris	Mature 3'	18.93063728	3.319E-06
GTGCATTGTAGTTGCATTGC	mir-33a	Canis familiaris	Mature 5'	17.31846552	3.337E-05
ACTGTGCGTGTGACAGCGGCTGA	mir-210	Canis familiaris	Mature 3'	16.01858535	4.05E-17
TGCCTACTGAGCTGATATCAGT	mir-24-1	Homo sapiens	Mature 5'	14.64780781	1.062E-05
TTGTGCTTGATCTAACCATGT	mir-218-1//mir-218-2	Canis familiaris	Mature 5'	14.00590709	0.0011811
CTGTGCGTGTGACAGCGGCTGA	mir-210	Homo sapiens	Mature 3'	13.98543522	3.017E-18
GAAGTTGTTCGTGGTGGATTCG	mir-382	Homo sapiens	Mature 5'	12.75415731	0.0006914
AATATAACACAGATGGCCTGT	mir-410	Homo sapiens//Canis familiaris	Mature 3'	12.51942046	3.632E-12
TTTGGTCCCCTTCAACCAGCTA	mir-133b	Canis familiaris	Mature 3'	12.49801242	0.003209
TGAGAACTGAATTCCATAGGCTG	mir-146b	Homo sapiens	Mature 5'	11.79355135	1.124E-08
TTCACAGTGGCTAAGCTAT	mir-9985	Homo sapiens	Mature 5'	11.67303463	6.13E-09
TGTGACTGGTTGACCAGAGGGG	mir-134	Canis familiaris	Mature 5'	10.60536824	7.386E-05
TTTTGCAATATGTTCCTGAAT	mir-450b	Canis familiaris	Mature 5'	10.04164561	4.124E-06
TGTTGTACTTTTTTTTTTGTTC	mir-3613	Homo sapiens	Mature 5'	9.680622608	0.003716
TGATATGTTTGATATATTAGGT	mir-190a	Canis familiaris	Mature 5'	9.355575823	3.337E-05
TTGCATAGTCACAAAAGTGATC	mir-153-1//mir-153-2	Homo sapiens	Mature 3'	9.1020575	5.171E-05
ATCACATTGCCAGGGATTT	mir-23a	Canis familiaris	Mature 3'	8.95475832	1.822E-08
CCCAATACACGGTCGACCTCTT	mir-323b	Homo sapiens	Mature 3'	8.488594102	0.0118325
TGAGAACTGAATTCCATAGGCT	mir-146b	Canis familiaris	Mature 5'	8.444922345	6.566E-10
AGATCGACCGTGTTATATTCGC	mir-369	Homo sapiens	Mature 5'	8.22842148	0.0001212
CAGCAGCAATTCATGTTTTGAA	mir-424	Homo sapiens	Mature 5'	8.181159788	5.613E-06
AACTGGCCTACAAAGTCCCAGT	mir-193a	Homo sapiens	Mature 3'	7.904726809	2.567E-05
TAATTTTATGTATAAGCTAGT	mir-590	Homo sapiens//Canis familiaris	Mature 3'	7.362803188	0.0004715
CAACTAGACTGTGAGCTTCTAG	mir-708	Homo sapiens	Mature 3'	7.29167017	6.231E-06
ATGGAGAAGGCTTCTGA	mir-4531	Homo sapiens	Mature 3'	7.124700419	0.0115036
TTCCCTTTGTCATCCTATGCCT	mir-204	Homo sapiens//Canis familiaris	Mature 5'	7.066164301	5.28E-11
TTAAGACTTGCAGTGATGTTT	mir-499	Canis familiaris	Mature 5'	6.98583403	4.183E-05
TTTGGCACTAGCACATTTTTGCT	mir-96	Canis familiaris	Mature 5'	6.710482423	0.0001298
CAATGTTTCCACAGTGCATCAC	mir-33a	Homo sapiens	Mature 3'	6.615947946	0.003716
CTCCGTTTGCCTGTTTTGCTGAT	mir-1468	Canis familiaris	Mature 5'	6.520264903	0.0038289
GAATGTTGCTCGGTGAACCCCT	mir-409	Homo sapiens	Mature 3'	6.382447424	9.024E-07
TTCACAGTGGCTAAGTTCTGC	mir-27b	Homo sapiens//Canis familiaris	Mature 3'	6.21152771	1.072E-08
ACTGGACTTGGAGTCAGGA	mir-378e	Homo sapiens	Mature 3'	6.180681605	0.0030807
AGAGGCTGGCCGTGATGAATTC	mir-485	Homo sapiens	Mature 5'	6.041904308	0.0198423
ATCACATTGCCAGGGATTA	mir-23b	Canis familiaris	Mature 5'	5.905596908	4.622E-05
TGTAAACATCCTCGACTGGAAG	mir-30a	Homo sapiens	Mature 5'	5.881042881	1.227E-06
TAGCAGCACAGAAATATTGGC	mir-195	Homo sapiens	Mature 5'	5.843787404	1.581E-06
TTTGCAATATGTTCCTGAATA	mir-450b	Homo sapiens	Mature 5'	5.820103193	0.0005849
TTATAATACAACCTGATAAGT	mir-374a	Canis familiaris	Mature 5'	5.81021596	0.0001141
TCAGTGCACTACAGAACTTTGT	mir-148a	Homo sapiens//Canis familiaris	Mature 3'	5.804450652	1.122E-06
TTTTTGCGATGTGTTCCTAATA	mir-450a	Canis familiaris	Mature 5'	5.602637461	0.0004846
TTTTGCGATGTGTTCCTAATAT	mir-450a-1//mir-450a-2	Homo sapiens	Mature 5'	5.599282017	4.588E-05
TACAGTACTGTGATAACTGA	mir-101-2//mir-101-1	Canis familiaris	Mature 3'	5.57943291	0.0001844
ATCATGTATGATACTGCAAACA	mir-6516	Homo sapiens	Mature 3'	5.576180596	0.0380416
CAACCCTAGGAGAGGGTGCCATTC	mir-652	Homo sapiens	Mature 5'	5.406217523	0.0241149
CAGTTATCACAGTGCTGATGCT	mir-101-1	Homo sapiens	Mature 5'	5.194794328	0.005143
TTATAAAGCAATGAGACTGATT	mir-340	Canis familiaris	Mature 5'	5.000413427	1.379E-05
GGATTCCTGGAAATACTGTTCT	mir-145	Homo sapiens	Mature 3'	4.910635604	0.0003102
TGGCAGTGTCTTAGCTGGTTGT	mir-34a	Canis familiaris	Mature 5'	4.409842958	0.0002383
CATTATTACTTTTGGTACGCG	mir-126	Canis familiaris	Mature 5'	4.40550018	0.0012169
TGTGACAGATTGATAACTGAAA	mir-542	Homo sapiens//Canis familiaris	Mature 3'	4.390078243	0.0002159
TTTGATGGATTTGCTTAGCACC	mir-8884	Canis familiaris	Mature 3'	4.27512555	0.0010814
TCTCTGGGCCTGTGTCTTAGGC	mir-330	Canis familiaris	Mature 5'	4.268177113	0.0002383
TGGCTCTGCGAGGTCAGCTCA	mir-1842	Canis familiaris	Mature 5'	4.264658021	7.056E-05
TGAGATGAAGCACTGTAGCTC	mir-143	Homo sapiens//Canis familiaris	Mature 3'	4.171389331	5.613E-06
TGTAAACATCCTACACTCAGCT	mir-30b	Canis familiaris	Mature 5'	4.090066953	2.495E-05
CCACCAGCTGGCGTTCCCTGG	mir-1838	Canis familiaris	Mature 5'	4.048695271	0.0066317
CAGTGCAATAGTATTGTCAAAGC	mir-301a	Canis familiaris	Mature 3'	4.013598137	4.791E-05
AGCAGCATTGTACAGGGCTAT	mir-107	Canis familiaris	Mature 3'	4.01198781	1.122E-06
TATGGCTTTTCATTCCTATGTGA	mir-135b	Canis familiaris	Mature 5'	3.939540109	0.003209
CTATACAACTTACTACTTTCCC	mir-98	Homo sapiens	Mature 3'	3.872577347	0.0107683
CTATACAGTCTACTGTCTTTCC	let-7f-2	Homo sapiens	Mature 3'	3.804915449	0.0183692
AGTTCTTCAGTGGCAAGCTTTA	mir-22	Homo sapiens	Mature 5'	3.723575332	5.382E-05
TAGCACCATTTGAAATCGGTTA	mir-29c//mir-29c-1//mir-	Homo sapiens//Canis familiaris	Mature 3'	3.663246345	0.0049439
TTCACAGTGGCTAAGTTCCG	mir-27a	Canis familiaris	Mature 3'	3.658706863	0.0001041
TTTTTCATTATTGCTCCTGACC	mir-335	Homo sapiens	Mature 3'	3.58566041	0.0059369
ATGCTGACATATTTACTAGAGG	mir-628	Canis familiaris	Mature 5'	3.46136634	0.008793
CATCCCTTGCATGGTGGAGGGT	mir-188	Canis familiaris	Mature 5'	3.432510589	0.0094291
TAGCAGCACAGAAATATTGGCA	mir-195	Canis familiaris	Mature 5'	3.407723431	0.0001902
TAGCAGCACATAATGGTTTGT	mir-15a	Canis familiaris	Mature 5'	3.35639829	0.0013046
TCTGGCTGCTATGGCCCCCTC	mir-3085	Homo sapiens	Mature 3'	3.34770094	0.0055996
AAGGAGCTTACAATCTAGCTGGG	mir-708	Homo sapiens//Canis familiaris	Mature 5'	3.280755963	0.0003599
ACAGTAGTCTGCACATTGGTT	mir-199-1//mir-199-2//m	Canis familiaris	Mature 3'	3.267996719	0.0002937
CTATACAATCTACTGTCTTTC	let-7a-1//let-7a-3	Homo sapiens	Mature 3'	3.21244727	0.0296662
TTCAAGTAATTCAGGATAGGT	mir-26b	Homo sapiens	Mature 5'	3.173241873	0.0023087
TATGTGCCTTTGGACTACATCG	mir-455	Homo sapiens//Canis familiaris	Mature 5'	3.080108257	0.0023087
TGGACGGAGAACTGATAAGGGT	mir-184	Canis familiaris	Mature 3'	3.06492006	0.0062769
TCAAGAGCAATAACGAAAAATGT	mir-335	Canis familiaris	Mature 5'	3.013573771	0.0018863
CAGCAGCACACTGTGGTTTGT	mir-497	Canis familiaris	Mature 5'	2.983348585	0.000962
TCGAGGAGCTCACAGTCT	mir-151b	Homo sapiens	Mature 3'	2.931454268	0.0105483
TAGCACCATTTGAAATCAGTGTT	mir-29b-2//mir-29b-1	Homo sapiens//Canis familiaris	Mature 3'	2.919217539	0.0342507
TTCACAAAGCCCATACACTTTT	mir-350	Canis familiaris	Mature 3'	2.913316514	0.0085382
CTGCGCAAGCTACTGCCTTGCT	let-7i	Homo sapiens	Mature 3'	2.795823989	0.0155885
TGTGCAAATCCATGCAAAACTG	mir-19b-1//mir-19b-2	Canis familiaris	Mature 3'	2.753606971	0.0087105
TACAGTACTGTGATAACTGAA	mir-101-1//mir-101-2	Homo sapiens	Mature 3'	2.744192299	0.0183923
GTGAAATGTTTAGGACCACTAG	mir-203a//mir-203	Homo sapiens//Canis familiaris	Mature 3'	2.728941512	0.0032832
TTCACAGTGGCTAAGTTCCGC	mir-27a	Homo sapiens	Mature 3'	2.720497123	0.0108981
TAGCTTATCAGACTGATGTTGA	mir-21	Homo sapiens//Canis familiaris	Mature 5'	2.696003342	0.0049604
TCTTTGGTTATCTAGCTGTATGA	mir-9-3//mir-9-2//mir-9-	Homo sapiens//Canis familiaris	Mature 5'	2.638685656	0.0049439
AACATTCAACCTGTCGGTGAGT	mir-181c	Homo sapiens	Mature 5'	2.608770608	0.0013046
CTGACCTATGAATTGACAGCC	mir-192	Homo sapiens//Canis familiaris	Mature 5'	2.60580398	0.0094484
TTATAATACAACCTGATAAGTG	mir-374a	Homo sapiens	Mature 5'	2.570332944	0.0273183
TGTAACAGCAACTCCATGTGGA	mir-194-2//mir-194	Homo sapiens//Canis familiaris	Mature 5'	2.540354502	0.0255694
TGAGGTAGTAAGTTGTATTGTT	mir-98	Homo sapiens//Canis familiaris	Mature 5'	2.460232209	0.0049439
CAGTGGTTTTACCCTATGGTAG	mir-140	Homo sapiens	Mature 5'	2.457877553	0.0180722
TGTAAACATCCTTGACTGGAAG	mir-30c	Homo sapiens	Mature 5'	2.338996109	0.0068632
TCAGTGCATGACAGAACTTGG	mir-152	Homo sapiens//Canis familiaris	Mature 3'	2.299285614	0.0059369
TACCCATTGCATATCGGAGTTG	mir-660	Canis familiaris	Mature 5'	2.293965282	0.0300709
AGGCAAGATGCTGGCATAGCTGT	mir-31	Canis familiaris	Mature 5'	2.216435433	0.0394023
ACTGGACTTGGAGTCAGAAA	mir-378d-2//mir-378d-1	Homo sapiens	Mature 3'	2.100272553	0.0491593
TTCAAGTAATTCAGGATAGGTT	mir-26b	Canis familiaris	Mature 5'	2.003961691	0.0465944

Ch.1 : Differentially expressed down-regulated miRNAs between KMEC normoxic and hypoxic cell lines.

Sequence	miRNA	Species	Strand	Fold Change	FDR
CCGCACTGTGGGTACTTGCTGC	mir-106b	Homo sapiens	Mature 3'	-2.054101	0.021671
TCCTTCATTCCACCGGAGTCTG	mir-205	Canis familiaris	Mature 5'	-2.062438	0.0489593
AGCAGCATTGTACAGGGCTATGA	mir-103a-1//mir-103-1//n	Homo sapiens//Canis familiaris	Mature 3'	-2.064396	0.0180722
TCCCTGAGACCCTTTAACCTGTGA	mir-125a	Homo sapiens	Mature 5'	-2.069221	0.0414943
AGCTACATTGTCTGCTGGGTTT	mir-221	Canis familiaris	Mature 3'	-2.086065	0.0139231
TCCCTGTCCTCCAGGAGCTCACG	mir-339	Homo sapiens	Mature 5'	-2.127552	0.0239059
CACCCGTAGAACCGACCTTGCG	mir-99b	Homo sapiens//Canis familiaris	Mature 5'	-2.129718	0.0262079
CAACGGAATCCCAAAAGCAGCTG	mir-191	Homo sapiens	Mature 5'	-2.177076	0.0150243
CTGGGAGAGGGTTGTTTACTCC	mir-30c-1	Homo sapiens	Mature 3'	-2.178386	0.0223006
AAAAGTGCTTACAGTGCAGGTAG	mir-106a	Homo sapiens	Mature 5'	-2.207608	0.0296662
GGATCCGAGTCACGGCACCA	mir-4454	Homo sapiens	Mature 5'	-2.229518	0.0435095
ACCACTGACCGTTGACTGTACC	mir-181a-2	Homo sapiens	Mature 3'	-2.313303	0.0435095
TCAGGCTCAGTCCCCTCCCGAT	mir-484	Homo sapiens	Mature 5'	-2.387838	0.0039951
AGCTACATCTGGCTACTGGGT	mir-222	Canis familiaris	Mature 3'	-2.403624	0.0032948
GTAGAGGAGATGGCGCAGGG	mir-877	Homo sapiens	Mature 5'	-2.441846	0.0223006
GTGAATTACCGAAGGGCCATAA	mir-183	Homo sapiens	Mature 3'	-2.477666	0.0144634
AGCAGCATTGTACAGGGCTATCA	mir-107	Homo sapiens	Mature 3'	-2.53699	0.0026247
ACAGGTGAGGTTCTTGGGAGCC	mir-125a	Homo sapiens	Mature 3'	-2.539782	0.0191811
TTGCAGCTGCCTGGGAGTGACTTCA	mir-1301	Canis familiaris	Mature 3'	-2.545085	0.0310601
TGAGGGGCAGAGAGCGAGACTTT	mir-423//mir-423a	Homo sapiens//Canis familiaris	Mature 5'	-2.55022	0.0445833
CTGTACAGCCTCCTAGCTTTCC	let-7a-2	Homo sapiens	Mature 3'	-2.592856	0.0155885
TCCGAGCCTGGGTCTCCCTCTT	mir-615	Homo sapiens	Mature 3'	-2.611653	0.036072
AAAAGCTGGGTTGAGAGGGCAA	mir-320b-1//mir-320b-2	Homo sapiens	Mature 3'	-2.668547	0.0487358
TGGAAGACTAGTGATTTTGTTGTT	mir-7-1//mir-7-2//mir-7-3	Homo sapiens	Mature 5'	-2.692601	0.008793
ACTGCTGAGCTAGCACTTCCCG	mir-93	Homo sapiens	Mature 3'	-2.702548	0.0069493
AAAGTGCTTACAGTGCAGGTAG	mir-106a	Canis familiaris	Mature 5'	-2.73137	0.0223006
TCGGATCCGTCTGAGCTTGGCT	mir-127	Canis familiaris	Mature 3'	-2.868716	0.0223006
CCTCCCTTTCTCGGACGTCGCCG	mir-8865	Canis familiaris	Mature 3'	-2.873523	0.0041013
ACCCCACTCCTGGTACC	mir-4286	Homo sapiens	Mature 5'	-3.009934	0.0026247
CAGTGCAATGATGAAAGGGCAT	mir-130b	Homo sapiens//Canis familiaris	Mature 3'	-3.101978	0.0004938
ACAAAAAAAAAAGCCCAACCCTTC	mir-3613	Homo sapiens	Mature 3'	-3.111004	0.005724
GGGGGTCCCCGGAGCTCGG	mir-615	Canis familiaris	Mature 5'	-3.123729	0.033495
CTATACGGCCTCCTAGCTTTCC	let-7e	Homo sapiens	Mature 3'	-3.127493	0.003985
CTTTTTGCGGTCTGGGCTTGC	mir-129-1//mir-129-2	Canis familiaris	Mature 5'	-3.18152	0.0008492
ACTCGGCGTGGCGTCGGTCGTG	mir-1307	Homo sapiens//Canis familiaris	Mature 3'	-3.188247	0.0012513
AGCTCGGTCTGAGGCCCCTCAGT	mir-423	Homo sapiens	Mature 3'	-3.308896	0.0002289
CTATACGACCTGCTGCCTTTCT	let-7d	Homo sapiens	Mature 3'	-3.340931	0.000829
TCTGGCTCCGTGTCTTCACTCCC	mir-149	Canis familiaris	Mature 5'	-3.399422	3.337E-05
AAGCCCTTACCCCAAAAAGCAT	mir-129-2	Homo sapiens	Mature 3'	-3.410174	0.0029774
GCGGGGCTGGGCGCGCG	mir-4508	Homo sapiens	Mature 5'	-3.43298	0.021116
AGAGTTGAGTCTGGACGTCCCG	mir-219a-1	Homo sapiens	Mature 3'	-3.476175	0.0017079
TGGGTCTTTGCGGGCGAGATGA	mir-193a	Homo sapiens//Canis familiaris	Mature 5'	-3.810249	0.0006813
CTATACAACCTACTGCCTTCCC	let-7b	Homo sapiens	Mature 3'	-3.861668	3.398E-05
TTATTGTCACGTTCTGATT	mir-5701-1//mir-5701-2/	Homo sapiens	Mature 5'	-3.8979	0.007056
TCCGGTTCTCAGGGCTCCACC	mir-671	Canis familiaris	Mature 3'	-3.983503	0.0001059
ACTGCCCTAAGTGCTCCTTCTGG	mir-18a	Homo sapiens	Mature 3'	-4.016458	0.0003721
AGGGACTTTCAGGGGCAGCTGT	mir-365b	Homo sapiens	Mature 5'	-4.044826	0.003985
TGCGGGGCTAGGGCTAACAGCA	mir-744	Homo sapiens	Mature 5'	-4.108179	0.0001807
TGGGTTCCTGGCATGCTGATTT	mir-23b	Homo sapiens	Mature 5'	-4.247234	0.0012781
AGCTACATTGTCTGCTGGGTTTC	mir-221	Homo sapiens	Mature 3'	-4.402421	2.376E-07
TTCCCAGCCAACGCACCA	mir-7977	Homo sapiens	Mature 5'	-4.417545	0.0011817
TTCACCACCTTCTCCACCCAGC	mir-197	Homo sapiens//Canis familiaris	Mature 3'	-4.426575	5.599E-06
AGGGCTTAGCTGCTTGTGAGCA	mir-27a	Homo sapiens	Mature 5'	-4.506381	3.349E-07
CTCCTGGGGCCCGCACTCTCGCT	mir-1343	Canis familiaris	Mature 3'	-4.540332	0.0002383
CGGGGTTTTGAGGGCGAGATGA	mir-193b	Homo sapiens//Canis familiaris	Mature 5'	-4.576606	0.0007018
CTCAGCCCCTGATTCTCTAGC	mir-8803	Canis familiaris	Mature 3'	-5.054462	2.702E-05
GCTGGTTTCATATGGTGGTTTAGA	mir-29b-1	Homo sapiens	Mature 5'	-5.10793	5.613E-06
TTAGGGCCCTGGCTCCATCTCCTTT	mir-1296	Canis familiaris	Mature 5'	-5.204584	0.0005981
GGGAGCCAGGAAGTATTGATGT	mir-505	Canis familiaris	Mature 5'	-5.230598	2.631E-05
TCTTGGGCCCCACCCCCGGAGACT	mir-8903	Canis familiaris	Mature 5'	-5.358378	0.000273
CCACCTCCCCTGCAAACGTCC	mir-1306	Canis familiaris	Mature 5'	-5.551101	1.736E-06
CTATACGACCTGCTGCCTTTCTTAG	let-7d	Canis familiaris	Mature 3'	-5.94861	0.0017104
CTCCTGGGGCCCGCACTCTCGC	mir-1343	Homo sapiens	Mature 3'	-5.952756	3.812E-06
TATTGCACTCGTCCCGGCCTCC	mir-92b	Homo sapiens//Canis familiaris	Mature 3'	-6.043378	2.153E-06
TATTGCACTTGTCCCGGCCTGT	mir-92a-1//mir-92a-2	Homo sapiens//Canis familiaris	Mature 3'	-6.062289	2.338E-07
GCCTTCTCTTCCCGGTTCTTCC	mir-320a	Homo sapiens	Mature 5'	-6.123378	0.0042009
GACTGAGCCACCTAGGTACCCCTTA	mir-8890	Canis familiaris	Mature 5'	-6.134152	9.013E-07
AGGGACTTTTGGGGGCAGATGTG	mir-365a	Homo sapiens	Mature 5'	-6.173618	0.0013046
TTAATGCTAATCGTGATAGGGGT	mir-155	Canis familiaris	Mature 5'	-6.276132	5.926E-08
TCACGTGACGGGCCTCGGCG	mir-1840	Canis familiaris	Mature 3'	-6.443596	2.495E-05
TTAGGGCCCTGGCTCCATCTCC	mir-1296	Homo sapiens	Mature 5'	-6.981553	3.452E-10
AATGGATTTTTGGAGCAGG	mir-1246	Homo sapiens	Mature 5'	-7.923259	0.006031
TTAATGCTAATCGTGATAGGGGTT	mir-155	Homo sapiens	Mature 5'	-7.994961	3.405E-10
CAGTGCCTCGGCAGTGCAGCCC	mir-33b	Homo sapiens	Mature 3'	-8.189278	1.589E-09
CGGGTAGAGAGGGCAGTGGGAGG	mir-197	Homo sapiens	Mature 5'	-8.756637	4.472E-06
TATGTAATATGGTCCACGTCT	mir-380	Canis familiaris	Mature 3'	-9.394326	1.035E-05
AGGGACGGGACGCGGTGCAGTG	mir-92b	Homo sapiens	Mature 5'	-9.97061	2.14E-05
AAGGCAGGGCCCCCGCTCCCC	mir-940	Homo sapiens	Mature 3'	-10.36325	6.728E-07
CCACCTCCCCTGCAAACGTCCA	mir-1306	Homo sapiens	Mature 5'	-11.43321	1.276E-11
AGGCGGAGACTTGGGCAATTG	mir-25	Homo sapiens	Mature 5'	-11.78126	1.075E-08
ACGCCCTTCCCCCCCTTCTTCA	mir-1249	Canis familiaris	Mature 3'	-12.03899	4.735E-14
CGGGGCCGTAGCACTGTCTGAGA	mir-128-1	Homo sapiens	Mature 5'	-12.58051	1.383E-11
CTCAGTAGCCAGTGTAGATCCT	mir-222	Homo sapiens	Mature 5'	-19.74065	3.593E-18
GGGGTTCCTGGGGATGGGATTT	mir-23a	Homo sapiens	Mature 5'	-26.1533	3.25E-17
GGGGCTGGGCGCGCGCC	mir-4492	Homo sapiens	Mature 3'	-34.04029	4.588E-05
AGGTTGGGATCGGTTGCAATGCT	mir-92a-1	Homo sapiens	Mature 5'	-37.68107	8.836E-19
AGGGAGGGACGGGGGCTGTGC	mir-149	Homo sapiens	Mature 3'	-90.8476	3.25E-17

Ch.1 : Differentially expressed up-regulated miRNAs between LMEC normoxic and hypoxic cell lines.

Sequence	miR	Species	Strand	Fold Change	FDR
TTCCTATGCATATACTTCTTTG	mir-202	Canis familiaris	Mature 5'	111.393232	3.35089E-11
GGGGCTGGGCGCGCGCC	mir-4492	Homo sapiens	Mature 3'	20.6773707	6.3703E-14
TGAGAACTGAATTCCATAGGCTG	mir-146b	Homo sapiens	Mature 5'	19.0387682	2.86288E-69
TGAGAACTGAATTCCATAGGCT	mir-146b	Canis familiaris	Mature 5'	13.033464	2.5832E-112
ACTGTGCGTGTGACAGCGGCTGA	mir-210	Canis familiaris	Mature 3'	10.3655289	1.9308E-108
TTGGAGGCGTGGGTTTT	mir-4443	Homo sapiens	Mature 5'	10.1154438	9.58723E-25
TTCACAAAGCCCATACACTTTT	mir-350	Canis familiaris	Mature 3'	9.84516603	1.588E-182
ATCACATTGCCAGGGATTT	mir-23a	Canis familiaris	Mature 3'	9.26811569	9.85414E-88
CTGTGCGTGTGACAGCGGCTGA	mir-210	Homo sapiens	Mature 3'	8.92390808	3.7068E-76
TGAGATGAAGCACTGTAGCTC	mir-143	Canis familiaris	Mature 3'	8.25557169	2.07042E-21
TCAGCACCAGGATATTGTTGGAG	mir-3065	Homo sapiens	Mature 3'	8.18929019	6.14174E-06
ATCACATTGCCAGGGATTA	mir-23b	Canis familiaris	Mature 3'	7.50476236	3.58134E-44
ATGGATAAGGCTTTGGCTT	mir-1261	Homo sapiens	Mature 5'	6.85961159	9.65923E-14
TCAACAAAATCACTGATGCTGGA	mir-3065	Homo sapiens	Mature 5'	6.70672398	8.22826E-46
GTGAGGACTCGGGAGGTGG	mir-1224	Homo sapiens	Mature 5'	6.03733801	5.14766E-72
CATCCATTTCTTTCACCTGGGGA	mir-8902	Canis familiaris	Mature 5'	5.20642679	0.000690927
AATCCTTGCTACCTGGGT	mir-500b	Homo sapiens	Mature 5'	4.99703878	0.000201129
GTGCATTGCTGTTGCATTGC	mir-33b	Canis familiaris	Mature 5'	4.9344475	6.08697E-69
TAGGTAGTTTCCTGTTGTTGGGA	mir-196b	Canis familiaris	Mature 5'	4.61740027	1.30047E-70
GCGGGGCTGGGCGCGCG	mir-4508	Homo sapiens	Mature 5'	4.56131707	4.07916E-09
TACAGTTGTTCAACCAGTTACT	mir-582	Canis familiaris	Mature 5'	4.50364964	2.20545E-31
TCTACAGTGCACGTGTCTCCAGT	mir-139	Homo sapiens	Mature 5'	4.2047611	8.24841E-31
AACATTCAACGCTGTCGGTGAG	mir-181a-1//mir-181a-2	Canis familiaris	Mature 5'	4.18723293	5.00724E-64
AATATAACACAGATGGCCTGT	mir-410	Canis familiaris	Mature 3'	4.00706605	7.42865E-05
CAACCCTAGGAGAGGGTGCCATT	mir-652	Homo sapiens	Mature 5'	3.87947592	8.04286E-21
TTCACAGTGGCTAAGCTAT	mir-9985	Homo sapiens	Mature 5'	3.87185553	2.65E-101
CCACCAGCTGGCGTTCCCTGG	mir-1838	Canis familiaris	Mature 5'	3.77701664	4.36694E-13
AACATTCAACGCTGTCGGTGAGT	mir-181a-2//mir-181a-1	Homo sapiens	Mature 5'	3.64309895	1.08296E-67
ATCCCACCTCTGCCACCA	mir-1260a	Homo sapiens	Mature 5'	3.50837228	3.39673E-23
AGGGGTGCTATCTGTGATTGA	mir-342	Homo sapiens	Mature 5'	3.47345058	6.48775E-05
TTACAGTTGTTCAACCAGTTACT	mir-582	Homo sapiens	Mature 5'	3.35465597	1.20747E-40
TAACACTGTCTGGTAAAGATGG	mir-141	Homo sapiens	Mature 3'	3.35183705	7.88394E-08
CATTATTACTTTTGGTACGCG	mir-126	Canis familiaris	Mature 5'	3.34856308	0.000245769
TATACAAGGGCAAGCTCTCTGT	mir-381	Canis familiaris	Mature 3'	3.28014114	5.24334E-10
TGAGTGTGTGTGTGTGAGTGTGT	mir-574	Homo sapiens	Mature 5'	3.21309205	1.76075E-79
CTTATGCAAGATTCCCTTCTA	mir-491	Canis familiaris	Mature 3'	3.20149538	1.13489E-08
TAGGTAGTTTCATGTTGTTGGG	mir-196a-2//mir-196a-1	Canis familiaris	Mature 5'	3.1337129	8.27872E-79
TATTGCACATTACTAAGTTGCA	mir-32	Homo sapiens	Mature 5'	3.01911475	0.000538053
AACACACCTATTCAAGGATTCA	mir-362	Homo sapiens	Mature 3'	2.99479438	5.96408E-05
TCGTGTCTTGTGTTGCAGCCGG	mir-187	Canis familiaris	Mature 3'	2.99293171	5.83287E-37
AGCTACATTGTCTGCTGGGTTT	mir-221	Canis familiaris	Mature 3'	2.93137071	4.29832E-54
AACATTCAACCTGTCGGTGAGT	mir-181c	Homo sapiens	Mature 5'	2.91455983	7.27388E-73
TAGGTAGTTTCCTGTTGTTGGG	mir-196b	Homo sapiens	Mature 5'	2.90283574	1.12281E-30
TTGGCCTCTGTTCCATGCCTGGG	mir-8829	Canis familiaris	Mature 5'	2.89082183	1.34927E-43
TCCTTCATTCCACCGGAGTCTG	mir-205	Canis familiaris	Mature 5'	2.79181779	1.20333E-05
CAGTGCAATAGTATTGTCAAAGC	mir-301a	Canis familiaris	Mature 3'	2.77223018	1.86268E-77
TTTGATGGATTTGCTTAGCACC	mir-8884	Canis familiaris	Mature 3'	2.75964684	4.1759E-104
CCAATATTGGCTGTGCTGCTCC	mir-195	Homo sapiens	Mature 3'	2.69172699	0.04722809
TGTAAACATCCCCGACTGGAAG	mir-30d	Homo sapiens	Mature 5'	2.63515634	2.25432E-50
CGCATCCCCTAGGGCATTGGTG	mir-324	Homo sapiens	Mature 5'	2.61848336	9.08517E-13
TACCCTGTAGATCCGAATTTGT	mir-10a	Canis familiaris	Mature 5'	2.55247617	5.5406E-104
AATGGCGCCACTAGGGTTGTG	mir-652	Homo sapiens	Mature 3'	2.49130685	1.07892E-14
ATCCCACCACTGCCACCAT	mir-1260b	Homo sapiens	Mature 5'	2.46219535	1.15758E-26
GTGCATTGTAGTTGCATTGC	mir-33a	Canis familiaris	Mature 5'	2.45470979	3.24056E-13
ATTGTCCTTGCTGTTTGGAGAT	mir-2355	Homo sapiens	Mature 3'	2.41587203	1.15517E-15
AACTGGCCCTCAAAGTCCCGCT	mir-193b	Homo sapiens	Mature 3'	2.35916669	9.14004E-32
TTGCATAGTCACAAAAGTGATC	mir-153-1//mir-153-2	Homo sapiens	Mature 3'	2.35006933	2.37881E-13
CCAGTTACCGCTTCCGCTACCGC	mir-935	Homo sapiens	Mature 3'	2.34468761	6.8073E-45
TTAATATCGGACAACCATTGT	mir-889	Homo sapiens	Mature 3'	2.33882563	0.027574018
TTCACAGTGGCTAAGTTCCG	mir-27a	Canis familiaris	Mature 3'	2.32120024	2.1069E-119
AACATTCAACCTGTCGGTGAGTT	mir-181c	Canis familiaris	Mature 5'	2.31702419	1.0066E-80
TGTAAACATCCTCGACTGGAAG	mir-30a	Homo sapiens	Mature 5'	2.29434622	2.22295E-78
AACATTCATTGCTGTCGGTGGGT	mir-181b-1//mir-181b-2	Homo sapiens	Mature 5'	2.26964795	2.64536E-55
TGGCTCAGTTCAGCAGGAACAG	mir-24-1//mir-24-2	Homo sapiens	Mature 3'	2.22507835	1.69759E-62
TTCACAGTGGCTAAGTTCTGC	mir-27b	Homo sapiens//Canis	Mature 3'	2.21387853	7.952E-107
ACTGGACTTGGAGCCAGAAG	mir-378f	Homo sapiens	Mature 3'	2.19474424	6.05586E-13
CCTGAACTAGGGGTCTGGAGG	mir-345	Canis familiaris	Mature 3'	2.157278	3.28477E-09
CTGGCCCTCTCTGCCCTTCCGT	mir-328	Canis familiaris	Mature 3'	2.15052064	0.001751167
TAGCAGCACAGAAATATTGGC	mir-195	Homo sapiens	Mature 5'	2.14385869	3.56527E-27
ACTGGACTTGGAGTCAGAAA	mir-378d-2//mir-378d-1	Homo sapiens	Mature 3'	2.10975489	5.74701E-43
TAACAGTCTACAGCCATGGTCGC	mir-132	Canis familiaris	Mature 3'	2.09121762	3.10436E-18
CCCAGTGTTTAGACTATCTGTTC	mir-199b	Homo sapiens	Mature 5'	2.05930347	0.000866642
TGTAAACATCCTACACTCAGCT	mir-30b	Canis familiaris	Mature 5'	2.04405961	2.19716E-57
TGGCTCTGCGAGGTCAGCTCA	mir-1842	Canis familiaris	Mature 5'	2.03845727	1.93378E-25
TAGTAGACCGTATAGCGTACG	mir-411	Homo sapiens	Mature 5'	2.00296292	2.98271E-05
TAACAGTCTCCAGTCACGGCC	mir-212	Homo sapiens	Mature 3'	2.00173706	2.94348E-23

Ch.1 : Differentially expressed down-regulated miRNAs between LMEC normoxic and hypoxic cell lines.

Sequence	miR	Species	Strand	Fold Change	FDR
AAAAGGCGGGAGAAGCCCCA	mir-4484	Homo sapiens	Mature 3'	-76.39995933	1.47964E-56
AGGGAGGGACGGGGGCTGTGC	mir-149	Homo sapiens	Mature 3'	-20.32219112	6.77725E-31
CTCAGTAGCCAGTGTAGATCCT	mir-222	Homo sapiens	Mature 5'	-17.39660513	0
CGGGGCCGTAGCACTGTCTGAGA	mir-128-1	Homo sapiens	Mature 5'	-16.50257017	0
AAGGCAGGGCCCCCGCTCCCC	mir-940	Homo sapiens	Mature 3'	-12.134808	8.11797E-08
GCCCAAAGGTGAATTTTTTGGG	mir-186	Homo sapiens	Mature 3'	-7.856487304	9.63405E-09
TGGGTTCCTGGCATGCTGATTT	mir-23b	Homo sapiens	Mature 5'	-7.587067873	7.13086E-16
CAGTGCCTCGGCAGTGCAGCCC	mir-33b	Homo sapiens	Mature 3'	-7.509875329	8.1824E-160
CTGGGAGAGGGTTGTTTACTCC	mir-30c-1	Homo sapiens	Mature 3'	-7.220500774	5.4425E-148
AGGTTGGGATCGGTTGCAATGCT	mir-92a-1	Homo sapiens	Mature 5'	-6.737156675	1.646E-196
TCCGGTTCTCAGGGCTCCACC	mir-671	Canis familiaris	Mature 3'	-6.344250517	0
GACTGAGCCACCTAGGTACCCCTTA	mir-8890	Canis familiaris	Mature 5'	-5.223170348	0
CTATACAACCTACTGCCTTCCC	let-7b	Homo sapiens	Mature 3'	-5.219169309	9.2994E-165
AGTTTTGCAGGTTTGCATCCAGC	mir-19b-1	Homo sapiens	Mature 5'	-5.103751936	1.68214E-10
TGAGACCTCTGGGTTCTGAGCT	mir-769	Homo sapiens	Mature 5'	-5.054676707	0
CCAGTATTAACTGTGCTGCTGA	mir-16-1	Homo sapiens	Mature 3'	-4.261435591	1.00259E-22
TCTCAGAGGGACTGCGACATCT	mir-1837-1//mir-1837-2//mir-1837-3//mir-1837-4	Canis familiaris	Mature 3'	-4.005995324	0.000711988
AATGGATTTTTGGAGCAGG	mir-1246	Homo sapiens	Mature 5'	-3.954690268	8.38861E-15
CTATACAATCTATTGCCTTCCC	let-7f-1	Homo sapiens	Mature 3'	-3.803208423	0
TATGGCTTTTTATTCCTATGTGA	mir-135a-2//mir-135a-1	Canis familiaris	Mature 5'	-3.663426041	2.12927E-05
CCTGTTCTCCATTACTTGGCT	mir-26b	Homo sapiens	Mature 3'	-3.61200597	1.4768E-49
ATTTGTGCTTGGCTCTGTCAC	mir-2113	Homo sapiens	Mature 3'	-3.340154943	0
CAAGCTCGTGTCTGTGGGTCCG	mir-99b	Homo sapiens	Mature 3'	-3.286556649	2.46914E-09
GGGGTTCCTGGGGATGGGATTT	mir-23a	Homo sapiens	Mature 5'	-3.201430548	1.41198E-11
TTTTGCAATATGTTCCTGAATA	mir-450b	Homo sapiens	Mature 5'	-3.19420131	0
TCTTGGGCCCCACCCCCGGAGACT	mir-8903	Canis familiaris	Mature 5'	-3.187193244	1.81235E-10
CTGTACAGCCTCCTAGCTTTCC	let-7a-2	Homo sapiens	Mature 3'	-3.179130229	9.43747E-11
AGAGTTGAGTCTGGACGTCCCG	mir-219a-1	Homo sapiens	Mature 3'	-3.156800372	3.78727E-70
CTCAGCCCCTGATTCTCTAGC	mir-8803	Canis familiaris	Mature 3'	-3.078331423	2.50013E-11
TATTGCACTCGTCCCGGCCTCC	mir-92b	Homo sapiens//Canis familiaris	Mature 3'	-2.943485045	0
AAAGTTCTGAGACACTCCGACT	mir-148a	Homo sapiens	Mature 5'	-2.940700455	0
TTAGGGCCCTGGCTCCATCTCC	mir-1296	Homo sapiens	Mature 5'	-2.907848187	0
CTATACGACCTGCTGCCTTTCTTAG	let-7d	Canis familiaris	Mature 3'	-2.888266596	0.000107935
GCTCTGACGAGGTTGCACTACT	mir-301b	Homo sapiens	Mature 5'	-2.872697688	0.012173831
CTATACGGCCTCCTAGCTTTCC	let-7e	Homo sapiens	Mature 3'	-2.803722139	9.18643E-27
TGGGCTAGGAAAAATGATTGGA	mir-664	Canis familiaris	Mature 5'	-2.753825536	8.02366E-06
ATGTAGGGCTAAAAGCCATGGG	mir-135b	Homo sapiens	Mature 3'	-2.720900908	6.00063E-19
TCAGTAAATGTTTATTGGATG	mir-545	Canis familiaris	Mature 5'	-2.714338607	0.005722041
ACTGCATTATGAGCACTTAAAG	mir-20a	Homo sapiens	Mature 3'	-2.682040325	1.32381E-05
TGGAAGACTAGTGATTTTGTTGTT	mir-7-1//mir-7-2//mir-7-3	Homo sapiens	Mature 5'	-2.674049927	0
CTCCTGGGGCCCGCACTCTCGC	mir-1343	Homo sapiens	Mature 3'	-2.662702919	0
CTGGGAGAAGGCTGTTTACTCT	mir-30c-2	Homo sapiens	Mature 3'	-2.647004633	3.07386E-19
CAATTTAGTGTGTGTGATATTT	mir-32	Homo sapiens	Mature 3'	-2.63374679	0.000293338
AGGCGGAGACTTGGGCAATTG	mir-25	Homo sapiens	Mature 5'	-2.62154123	0
ACTGCTGAGCTAGCACTTCCCG	mir-93	Homo sapiens	Mature 3'	-2.615330736	0
AAAAGTGCTTACAGTGCAGGTAG	mir-106a	Homo sapiens	Mature 5'	-2.593413483	0.026038369
TCCCTGTCCTCCAGGAGCTCACG	mir-339	Homo sapiens	Mature 5'	-2.57371467	0
ACTCTTTCCCTGTTGCACTAC	mir-130b	Homo sapiens	Mature 5'	-2.570154274	0
CTTTCAGTCGGATGTTTACAGC	mir-30e	Homo sapiens//Canis familiaris	Mature 3'	-2.520387989	0
CTTTCAGTCAGATGTTTGCTGC	mir-30d	Homo sapiens	Mature 3'	-2.478800666	0
AACCCGTAGATCCGAACTTGTG	mir-100	Homo sapiens	Mature 5'	-2.448297422	0.036825822
TGGATATGATGACTGAAA	mir-4791	Homo sapiens	Mature 5'	-2.404573107	0.024939654
CAAGCTTGTATCTATAGGTATG	mir-100	Homo sapiens	Mature 3'	-2.404549261	0.001095656
TGTAAACATCCTACACTCTCAGCT	mir-30c-2//mir-30c-1	Canis familiaris	Mature 5'	-2.400373019	0
TCACAAGTCAGGCTCTTGGGAC	mir-125b-2	Homo sapiens	Mature 3'	-2.383046881	7.29621E-20
AAAGTGCTTACAGTGCAGGTAG	mir-106a	Canis familiaris	Mature 5'	-2.370885832	6.73254E-12
ATGACCTACGAATTGATAGACA	mir-215	Canis familiaris	Mature 5'	-2.349246152	1.7664E-11
TATTGCACTTGTCCCGGCCTGT	mir-92a-1//mir-92a-2	Homo sapiens//Canis familiaris	Mature 3'	-2.341637072	0
AGACCCTGGTCTGCACTCTATC	mir-504	Canis familiaris	Mature 5'	-2.295741769	0
AGCTCGGTCTGAGGCCCCTCAGT	mir-423	Homo sapiens	Mature 3'	-2.27992985	0
CTATACAATCTACTGTCTTTC	let-7a-1//let-7a-3	Homo sapiens	Mature 3'	-2.267786607	0
CCAGTGGGGCTGCTGTTATCTG	mir-194-2	Homo sapiens	Mature 3'	-2.245731096	0.016755855
CTCTTCAATCTCAGGACTCGC	mir-676	Canis familiaris	Mature 5'	-2.183888117	0.020420097
TGGTTCTAGACTTGCCAACTA	mir-182	Homo sapiens	Mature 3'	-2.170662009	2.342E-05
ACTGCAGTGAAGGCACTTGTAG	mir-17	Homo sapiens//Canis familiaris	Mature 3'	-2.161163233	0
CTATACAGTCTACTGTCTTTCC	let-7f-2	Homo sapiens	Mature 3'	-2.153033509	3.37526E-22
GCTGGTTTCATATGGTGGTTTAGA	mir-29b-1	Homo sapiens	Mature 5'	-2.137866894	5.01319E-11
AGGCAGTGTAGTTAGCTGATTGC	mir-34c	Canis familiaris	Mature 5'	-2.119542527	0.011281615
TAAGGTGCATCTAGTGCAGATAG	mir-18a	Homo sapiens	Mature 5'	-2.114858602	0
CTTTCAGTCGGATGTTTGCAGC	mir-30a	Homo sapiens	Mature 3'	-2.087651186	0
AAAGCAAATGTTGGGTGAACGGC	mir-10527	Homo sapiens	Mature 5'	-2.069170445	0.016289255
CAAAGTGCTTACAGTGCAGGTAG	mir-17	Homo sapiens	Mature 5'	-2.068921201	0
AGGAAGCCCTGGAGGGGCTGGAG	mir-671	Homo sapiens	Mature 5'	-2.047759257	0
CTGTGGCCTCTGGGTGTGTACCCT	mir-7180	Canis familiaris	Mature 3'	-2.007201213	2.6199E-23
TTGTGTCAATATGCGATGATGT	mir-592	Homo sapiens	Mature 5'	-2.004171127	0

Ch.1 : Common Differentially expressed miRNAs in the KMEC and LMEC hypoxic cell lines.

Up-regulated miRNAs

Up-regulated					
Sequence	miR	Species	Strand	Fold Change	FDR
CCCAGTGTTTAGACTATCTGTTC	mir-199b	Homo sapiens	Mature 5'	48.51186	5.36E-20
TTAATATCGGACAACCATTGT	mir-889	Homo sapiens	Mature 3'	26.88134	7.11E-06
GTGCATTGCTGTTGCATTGC	mir-33b	Canis familiaris	Mature 5'	25.88697	9.47E-08
GTGCATTGTAGTTGCATTGC	mir-33a	Canis familiaris	Mature 5'	17.31847	3.34E-05
ACTGTGCGTGTGACAGCGGCTGA	mir-210	Canis familiaris	Mature 3'	16.01859	4.05E-17
CTGTGCGTGTGACAGCGGCTGA	mir-210	Homo sapiens	Mature 3'	13.98544	3.02E-18
AATATAACACAGATGGCCTGT	mir-410	Homo sapiens//Canis familiaris	Mature 3'	12.51942	3.63E-12
TGAGAACTGAATTCCATAGGCTG	mir-146b	Homo sapiens	Mature 5'	11.79355	1.12E-08
TTCACAGTGGCTAAGCTAT	mir-9985	Homo sapiens	Mature 5'	11.67303	6.13E-09
TTGCATAGTCACAAAAGTGATC	mir-153-1//mir-153-2	Homo sapiens	Mature 3'	9.102058	5.17E-05
ATCACATTGCCAGGGATTT	mir-23a	Canis familiaris	Mature 3'	8.954758	1.82E-08
TGAGAACTGAATTCCATAGGCT	mir-146b	Canis familiaris	Mature 5'	8.444922	6.57E-10
TTCACAGTGGCTAAGTTCTGC	mir-27b	Homo sapiens//Canis familiaris	Mature 3'	6.211528	1.07E-08
ATCACATTGCCAGGGATTA	mir-23b	Canis familiaris	Mature 3'	5.905597	4.62E-05
TGTAAACATCCTCGACTGGAAG	mir-30a	Homo sapiens	Mature 5'	5.881043	1.23E-06
TAGCAGCACAGAAATATTGGC	mir-195	Homo sapiens	Mature 5'	5.843787	1.58E-06
CAACCCTAGGAGAGGGTGCCATTCA	mir-652	Homo sapiens	Mature 5'	5.406218	0.024115
CATTATTACTTTTGGTACGCG	mir-126	Canis familiaris	Mature 5'	4.4055	0.001217
TTTGATGGATTTGCTTAGCACC	mir-8884	Canis familiaris	Mature 3'	4.275126	0.001081
TGGCTCTGCGAGGTCAGCTCA	mir-1842	Canis familiaris	Mature 5'	4.264658	7.06E-05
TGAGATGAAGCACTGTAGCTC	mir-143	Homo sapiens//Canis familiaris	Mature 3'	4.171389	5.61E-06
TGTAAACATCCTACACTCAGCT	mir-30b	Canis familiaris	Mature 5'	4.090067	2.5E-05
CCACCAGCTGGCGTTCCCTGG	mir-1838	Canis familiaris	Mature 5'	4.048695	0.006632
CAGTGCAATAGTATTGTCAAAGC	mir-301a	Canis familiaris	Mature 3'	4.013598	4.79E-05
TTCACAGTGGCTAAGTTCCG	mir-27a	Canis familiaris	Mature 3'	3.658707	0.000104
TTCACAAAGCCCATACACTTTT	mir-350	Canis familiaris	Mature 3'	2.913317	0.008538
AACATTCAACCTGTCGGTGAGT	mir-181c	Homo sapiens	Mature 5'	2.608771	0.001305
ACTGGACTTGGAGTCAGAAA	mir-378d-2//mir-378c	Homo sapiens	Mature 3'	2.100273	0.049159

Down-regulated miRNAs

Down-regulated					
Sequence	miR	Species	Strand	Fold Change	FDR
TCCCTGTCCTCCAGGAGCTCACG	mir-339	Homo sapiens	Mature 5'	-2.573715	0
CTGGGAGAGGGTTGTTTACTCC	mir-30c-1	Homo sapiens	Mature 3'	-7.220501	5.4E-148
AAAAGTGCTTACAGTGCAGGTAG	mir-106a	Homo sapiens	Mature 5'	-2.593413	0.026038
CTGTACAGCCTCCTAGCTTTCC	let-7a-2	Homo sapiens	Mature 3'	-3.17913	9.44E-11
TGGAAGACTAGTGATTTTGTTGTT	mir-7-1//mir-7-2//mir-	Homo sapiens	Mature 5'	-2.67405	0
ACTGCTGAGCTAGCACTTCCCG	mir-93	Homo sapiens	Mature 3'	-2.615331	0
AAAGTGCTTACAGTGCAGGTAG	mir-106a	Canis familiaris	Mature 5'	-2.370886	6.73E-12
CTATACGGCCTCCTAGCTTTCC	let-7e	Homo sapiens	Mature 3'	-2.803722	9.19E-27
AGCTCGGTCTGAGGCCCCTCAGT	mir-423	Homo sapiens	Mature 3'	-2.27993	0
AGAGTTGAGTCTGGACGTCCCG	mir-219a-1	Homo sapiens	Mature 3'	-3.1568	3.79E-70
CTATACAACCTACTGCCTTCCC	let-7b	Homo sapiens	Mature 3'	-5.219169	9.3E-165
TCCGGTTCTCAGGGCTCCACC	mir-671	Canis familiaris	Mature 3'	-6.344251	0
TGGGTTCCTGGCATGCTGATTT	mir-23b	Homo sapiens	Mature 5'	-7.587068	7.13E-16
CTCAGCCCCTGATTCTCTAGC	mir-8803	Canis familiaris	Mature 3'	-3.078331	2.5E-11
GCTGGTTTCATATGGTGGTTTAGA	mir-29b-1	Homo sapiens	Mature 5'	-2.137867	5.01E-11
TCTTGGGCCCCACCCCCGGAGAC	mir-8903	Canis familiaris	Mature 5'	-3.187193	1.81E-10
CTATACGACCTGCTGCCTTTCTTA	let-7d	Canis familiaris	Mature 3'	-2.888267	0.000108
CTCCTGGGGCCCGCACTCTCGC	mir-1343	Homo sapiens	Mature 3'	-2.662703	0
TATTGCACTCGTCCCGGCCTCC	mir-92b	Homo sapiens//Canis familia	Mature 3'	-2.943485	0
TATTGCACTTGTCCCGGCCTGT	mir-92a-1//mir-92a-2	Homo sapiens//Canis familia	Mature 3'	-2.341637	0
GACTGAGCCACCTAGGTACCCCT	mir-8890	Canis familiaris	Mature 5'	-5.22317	0
TTAGGGCCCTGGCTCCATCTCC	mir-1296	Homo sapiens	Mature 5'	-2.907848	0
AATGGATTTTTGGAGCAGG	mir-1246	Homo sapiens	Mature 5'	-3.95469	8.39E-15
CAGTGCCTCGGCAGTGCAGCCC	mir-33b	Homo sapiens	Mature 3'	-7.509875	8.2E-160
AAGGCAGGGCCCCCGCTCCCC	mir-940	Homo sapiens	Mature 3'	-12.13481	8.12E-08
AGGCGGAGACTTGGGCAATTG	mir-25	Homo sapiens	Mature 5'	-2.621541	0
CGGGGCCGTAGCACTGTCTGAGA	mir-128-1	Homo sapiens	Mature 5'	-16.50257	0
CTCAGTAGCCAGTGTAGATCCT	mir-222	Homo sapiens	Mature 5'	-17.39661	0
GGGGTTCCTGGGGATGGGATTT	mir-23a	Homo sapiens	Mature 5'	-3.201431	1.41E-11
AGGTTGGGATCGGTTGCAATGCT	mir-92a-1	Homo sapiens	Mature 5'	-6.737157	1.6E-196
AGGGAGGGACGGGGGCTGTGC	mir-149	Homo sapiens	Mature 3'	-20.32219	6.78E-31

Ch.1 : Differentially expressed up-regulated miRNAs between Control and KMEC hypoxic cell lines.

Sequence	miR	Species	Strand	Fold Change	FDR
AAAAGCTGGGTTGAGAGGGCGA	mir-320a//mir-320	Homo sapiens//Canis famil	Mature 3'	2.222903979	0.047864191
AAAGCAAATGTTGGGTGAACGGC	mir-10527	Homo sapiens	Mature 5'	6.583207745	0.001332603
AAAGTTCTGAGACACTCCGACT	mir-148a	Homo sapiens	Mature 5'	4.975159512	2.64474E-06
AACATTCAACCTGTCGGTGAGTT	mir-181c	Canis familiaris	Mature 5'	2.437383342	0.003693759
AACATTCAACGCTGTCGGTGAGT	mir-181a-2//mir-181a	Homo sapiens	Mature 5'	2.773624172	0.000988951
AACATTCATTGCTGTCGGTG	mir-181b-1//mir-181b	Canis familiaris	Mature 5'	2.667141515	0.002527294
AACATTCATTGCTGTCGGTGGGT	mir-181b-1//mir-181b	Homo sapiens	Mature 5'	8.846159532	1.33455E-09
AACATTCATTGTTGTCGGTGGGT	mir-181d	Homo sapiens//Canis famil	Mature 5'	2.341030405	0.015115501
AACCATCGACCGTTGAGTGGAC	mir-181c	Homo sapiens	Mature 3'	4.959855092	7.7039E-07
AACTGGCCTACAAAGTCCCAGT	mir-193a	Homo sapiens	Mature 3'	4.315446175	0.003054494
AAGCCCTTACCCCAAAAAGCAT	mir-129-2	Homo sapiens	Mature 3'	111.0796118	5.83115E-19
AAGCTGCCAGTTGAAGAACTGT	mir-22	Homo sapiens//Canis famil	Mature 3'	6.048363186	2.04393E-09
AAGGAGCTCACAGTCTATTGAG	mir-28	Homo sapiens	Mature 5'	9.692739661	4.07494E-13
AAGGCAGGGCCCCCGCTCCCC	mir-940	Homo sapiens	Mature 3'	9.629654084	0.000680026
AAGTGCCCCCACAGTTTGAGTGC	mir-371b	Homo sapiens	Mature 3'	96.80427617	1.13278E-19
AAGTTCTGTTATACACTCAGGC	mir-148b	Homo sapiens	Mature 5'	4.522652794	0.000191828
AATGACACGATCACTCCCGTTGA	mir-425	Homo sapiens//Canis famil	Mature 5'	2.719705003	0.003008924
ACAAAAAAAAAAGCCCAACCCTTC	mir-3613	Homo sapiens	Mature 3'	4.805035974	0.000275058
ACAGGTGAGGTTCTTGGGAGCC	mir-125a	Homo sapiens	Mature 3'	6.709439465	1.34267E-05
ACCACTGACCGTTGACTGTACC	mir-181a-2	Homo sapiens	Mature 3'	8.190388076	6.10025E-07
ACCATCGACCGTTGATTGTACC	mir-181a-1	Homo sapiens	Mature 3'	12.1019378	1.84966E-13
ACCCCACTCCTGGTACC	mir-4286	Homo sapiens	Mature 5'	5.603615096	1.72287E-05
ACCGTGGCTTTCGATTGTTACT	mir-132	Homo sapiens	Mature 5'	7.707664006	1.29104E-06
ACCTTGGCTCTAGACTGCTTACT	mir-212	Canis familiaris	Mature 5'	2.376978178	0.035850211
ACGGGTTAGGCTCTTGGGAGCT	mir-125b-1	Homo sapiens	Mature 3'	11.27706368	2.32572E-12
ACGTTGGCTCTGGTGGTG	mir-1306	Homo sapiens	Mature 3'	11.44460767	2.66635E-06
ACTCAAAAAATGGCGGCACTTT	mir-371	Canis familiaris	Mature 5'	150.8911736	2.16019E-31
ACTCGGCGTGGCGTCGGTCGTG	mir-1307	Homo sapiens//Canis famil	Mature 3'	9.724052418	4.33409E-09
ACTCTTTCCCTGTTGCACTAC	mir-130b	Homo sapiens	Mature 5'	3.151003012	0.00275739
ACTGATTTCTTTTGGTGTTCAG	mir-29a	Homo sapiens	Mature 5'	5.799937218	0.000408675
ACTGCCCTAAGTGCTCCTTCTGG	mir-18a	Homo sapiens	Mature 3'	4.16165368	0.000757942
ACTGGAGGTCTCTGTCTGGCTT	mir-1843	Canis familiaris	Mature 5'	9.88098313	4.84071E-08
ACTGTGCGTGTGACAGCGGCTGA	mir-210	Canis familiaris	Mature 3'	9.332749011	6.17273E-11
AGAGCTTAGCTGATTGGTGAAC	mir-27b	Homo sapiens	Mature 5'	7.027819068	5.56777E-09
AGAGGAAAGCTGGACGGCAAGC	mir-1841	Canis familiaris	Mature 5'	51.17826798	3.8664E-15
AGAGGTAGTAGGTTGCATAGTT	let-7d	Homo sapiens	Mature 5'	7.08642737	3.03634E-09
AGAGTTGAGTCTGGACGTCCCG	mir-219a-1	Homo sapiens	Mature 3'	3.917841612	0.001323416
AGCAGCATTGTACAGGGCTAT	mir-107	Canis familiaris	Mature 3'	6.528002191	2.26614E-09
AGCAGCATTGTACAGGGCTATCA	mir-107	Homo sapiens	Mature 3'	2.140954604	0.029309513
AGCTCGGTCTGAGGCCCCTCAGT	mir-423	Homo sapiens	Mature 3'	2.25027068	0.018634361
AGCTGGTGTTGTGAATCAGGCCG	mir-138a	Canis familiaris	Mature 5'	6.904824503	9.28825E-08
AGGAAGCCCTGGAGGGGCTGGAG	mir-671	Homo sapiens	Mature 5'	4.558619867	9.09718E-05
AGGCAGTGTATTGTTAGCTGGC				12.79559465	3.38326E-05
AGGCGGAGACTTGGGCAATTG	mir-25	Homo sapiens	Mature 5'	8.301762978	6.37452E-06
AGGGACTTTCAGGGGCAGCTGT	mir-365b	Homo sapiens	Mature 5'	14.80749804	4.43602E-07
AGGGACTTTTGGGGGCAGATGTG	mir-365a	Homo sapiens	Mature 5'	4.20776472	0.01606294
AGGGGCTGGCTTTCCTCTGGTC	mir-185	Homo sapiens	Mature 3'	4.202083717	0.000293011
AGGTGCCATTCTGAGGGCCAGGAGT				142.7187741	1.50338E-08
AGGTTCTGTGATACACTCCGACT	mir-152	Homo sapiens	Mature 5'	6.537271867	1.5792E-05
AGTGGGGAACCCTTCCATGAGG	mir-491	Homo sapiens	Mature 5'	5.690734565	0.000213488
AGTTCTTCAGTGGCAAGCTTTA	mir-22	Homo sapiens	Mature 5'	3.440180817	0.000353428
ATAAAGCTAGATAACCGAAAGT	mir-9-1//mir-9-2//mir-	Homo sapiens	Mature 3'	28.4312802	2.84536E-12
ATCAACAGACATTAATTGGGCG	mir-421	Canis familiaris	Mature 3'	11.25758294	5.26775E-13
ATCAACAGACATTAATTGGGCGC	mir-421	Homo sapiens	Mature 3'	15.21371661	7.46462E-14
ATCCCCAGATACAATGGACAA	mir-2355	Homo sapiens	Mature 5'	5.392680617	2.94033E-05
ATGTAGGGCTAAAAGCCATGGG	mir-135b	Homo sapiens	Mature 3'	76.15908508	5.01108E-13
ATGTATTCGTACTGTCTGATG	mir-10395	Homo sapiens	Mature 3'	6.118971332	0.001481011
ATTAGCGCCTGACTGAGTGGGGTC				224.0920138	1.09995E-09
ATTGTCCTTGCTGTTTGGAGAT	mir-2355	Homo sapiens	Mature 3'	6.903012091	3.39009E-05
ATTGTGTCAATATGCGATGATGT				140.1744622	2.40275E-12
CAAAACGTGAGGCGCTGCTAT	mir-424	Homo sapiens//Canis famil	Mature 3'	80.14024912	7.17152E-16
CAAAGTGCTCACAGTGCAGGTA	mir-20b	Canis familiaris	Mature 5'	3.508934144	0.008710778
CAACAAATCACAGTCTGCCATA	mir-7-1	Homo sapiens	Mature 3'	2.868322476	0.00676515
CAACGGAATCCCAAAAGCAGCTG	mir-191	Homo sapiens	Mature 5'	2.911603032	0.000906974
CAAGCTCGTGTCTGTGGGTCCG	mir-99b	Homo sapiens	Mature 3'	6.647234396	0.000666443
CACAGCAAGTGTAGACAGGCA	mir-3120	Homo sapiens	Mature 3'	13.33216435	0.000304658
CACCCGTAGAACCGACCTTGCG	mir-99b	Homo sapiens//Canis famil	Mature 5'	2.416831158	0.010763303
CACGCTCATGCACACACCCACA	mir-574	Homo sapiens//Canis famil	Mature 3'	3.021951412	0.002127171
CACTAGATTGTGAGCTCCTGGA	mir-28	Homo sapiens//Canis famil	Mature 3'	7.814764798	1.10903E-10
CAGCAGCAATTCATGTTTTGAA	mir-424	Homo sapiens	Mature 5'	28.43980812	1.76265E-10
CAGTGCAATAGTATTGTCAAAGC	mir-301a	Canis familiaris	Mature 3'	4.435042649	5.87981E-05
CAGTGCAATGATATTGTCAAAGC	mir-301b	Canis familiaris	Mature 3'	5.547361906	4.28353E-05
CAGTGCAATGATGAAAGGGCAT	mir-130b	Canis familiaris	Mature 3'	14.2804878	3.42061E-12
CAGTGCAATGTTAAAAGGGCAT	mir-130a	Homo sapiens//Canis famil	Mature 3'	2.421127772	0.004164599
CAGTGGTTTTACCCTATGGTAG	mir-140	Homo sapiens	Mature 5'	2.564031634	0.018734286
CATCCCTTGCATGGTGGAGGGT	mir-188	Canis familiaris	Mature 5'	3.063600847	0.01992894
CCACCTCCCCTGCAAACGTCC	mir-1306	Canis familiaris	Mature 5'	3.917274683	0.000545101
CCACCTCCCCTGCAAACGTCCA	mir-1306	Homo sapiens	Mature 5'	3.314414829	0.002209073
CCAGTTACCGCTTCCGCTACCGC	mir-935	Homo sapiens	Mature 3'	297.4457275	1.02623E-21
CCCACTGCCCCAGGTGCTGCTGG	mir-324	Homo sapiens	Mature 3'	8.444862912	1.46919E-07
CCTCCCTTTCTCGGACGTCGCCG	mir-8865	Canis familiaris	Mature 3'	68.0175449	1.46435E-17
CCTGTGCCTTTTACCTCTTTAA	mir-6529	Canis familiaris	Mature 3'	12.9611299	2.27973E-09
CGAATCATTATTTGCTGCTCTA	mir-15b	Homo sapiens	Mature 3'	3.929477867	0.003482172
CGCATCCCCTAGGGCATTGGTG	mir-324	Homo sapiens	Mature 5'	2.250972505	0.042068909
CGCCGCGCGCATCGGCTCAGC	mir-6869	Homo sapiens	Mature 3'	8.523019562	0.000137779
CGCGCCTGCAGGAACTGGTAGA				221.1534131	1.25481E-08
CGGCAACAAGAAACTGCCTGAG				113.8784494	9.65382E-07
CGGCCCCACGCACCAGGGTAAGA	mir-874	Homo sapiens	Mature 5'	2.227657314	0.032231926
CGGGGCCGTAGCACTGTCTGAGA	mir-128-1	Homo sapiens	Mature 5'	5.65776369	4.23483E-05
CGGGTAGAGAGGGCAGTGGGAGG	mir-197	Homo sapiens	Mature 5'	15.96761511	3.74011E-05
CGTCAACACTTGCTGGTTTCCT	mir-505	Homo sapiens	Mature 3'	2.890067951	0.001743508
CTAGGTATGGTCCCAGGGATCC	mir-331	Homo sapiens	Mature 5'	2.134265805	0.039176984
CTATACGACCTGCTGCCTTTCT	let-7d	Homo sapiens	Mature 3'	4.983605673	1.49141E-05
CTATACGACCTGCTGCCTTTCTTAG	let-7d	Canis familiaris	Mature 3'	6.061263808	0.001006679
CTATACGGCCTCCTAGCTTTCC	let-7e	Homo sapiens	Mature 3'	4.417562858	0.000527983
CTCACTGAACAATGAATGCAA	mir-181b-1	Homo sapiens	Mature 3'	24.53965209	6.68569E-09
CTCACTGATCAATGAATGCA	mir-181b-2	Homo sapiens	Mature 3'	4.627487036	0.001317041
CTCAGCCCCTGATTCTCTAGC	mir-8803	Canis familiaris	Mature 3'	4.318952599	0.00059611

CTGCCCTGGCCCGAGGGACCGA	mir-874	Canis familiaris	Mature 3'	4.242641268	1.49141E-05
CTGGGAGGTGGATGTTTACTTC	mir-30b	Homo sapiens	Mature 3'	3.37419101	0.005020537
CTGGGATCTCTGGGGTCTTGGTT	mir-769	Canis familiaris	Mature 3'	7.644771407	3.72995E-07
CTGTACAGCCTCCTAGCTTTCC	let-7a-2	Homo sapiens	Mature 3'	7.226185776	5.55588E-06
CTGTATGCCCTCACCGCTCA				1234.022022	5.31055E-23
CTGTGCGTGTGACAGCGGCTGA	mir-210	Homo sapiens	Mature 3'	4.771968302	7.15411E-07
CTGTGGCCTCTGGGTGTGTACCCT	mir-7180	Canis familiaris	Mature 3'	8.348937583	1.64031E-08
CTGTTGCCACTAACCTCAACCT	mir-744	Homo sapiens	Mature 3'	2.792828983	0.010333129
CTTATGCAAGATTCCCTTCTAC	mir-491	Homo sapiens	Mature 3'	8.782631276	4.56016E-05
CTTTTTGCGGTCTGGGCTTGC	mir-129-1//mir-129-2	Canis familiaris	Mature 5'	75.23194686	3.03765E-19
GACTGAGCCACCTAGGTACCCCTTA	mir-8890	Canis familiaris	Mature 5'	110.7677415	8.88828E-23
GAGAGATCAGAGGCGCAGAGTG	mir-6529	Homo sapiens	Mature 5'	186.5308187	1.07057E-24
GATATCAGCTCAGTAGGCACCG				13.67961105	0.000213488
GATTAGCATCTGCCTGGGCCGAGT				141.9045693	2.30852E-07
GCAAAGCACACGGCCTGCAGAGA	mir-330	Homo sapiens	Mature 3'	10.20447324	4.24973E-07
GCAGTCCATGGGCATATACAC	mir-455	Homo sapiens	Mature 3'	2.040164739	0.040223837
GCCCAAAGGTGAATTTTTTGGG	mir-186	Homo sapiens	Mature 3'	3.386372859	0.022082173
GCCCCTGGGCCTATCCTAGAA	mir-331	Canis familiaris	Mature 3'	2.539604028	0.005385111
GCGACCCACTCTTGGTTTCCA	mir-551a	Homo sapiens//Canis famil	Mature 3'	3.470138187	0.004481893
GCTCTGACTTTATTGCACTACT	mir-301a	Homo sapiens	Mature 5'	10.23256839	5.29034E-05
GCTGGTTTCATATGGTGGTTTAGA	mir-29b-1	Homo sapiens	Mature 5'	10.26178215	4.26176E-08
GGATCCGAGTCACGGCACCA	mir-4454	Homo sapiens	Mature 5'	3.427103821	0.001503177
GGGAGCCAGGAAGTATTGATGT	mir-505	Canis familiaris	Mature 5'	12.719496	1.1872E-07
GGGGGTCCCCGGAGCTCGG				277.7683048	2.13481E-09
GGGGTTCCTGGGGATGGGATTT	mir-23a	Homo sapiens	Mature 5'	5.26807611	0.000434885
GGTCGGATTCCGTGCCTGGAGT	mir-8859b	Canis familiaris	Mature 3'	59.86014848	3.82239E-24
GTAGAGGAGATGGCGCAGGG	mir-877	Homo sapiens	Mature 5'	210.6894579	3.02613E-25
GTGAATTACCGAAGGGCCATAA	mir-183	Homo sapiens	Mature 3'	5.506846123	1.8255E-05
GTGAGGACTCGGGAGGTGG	mir-1224	Homo sapiens	Mature 5'	5.213134205	0.001927527
GTTCCTGCTGAACTGAGCCAG	mir-3074	Homo sapiens	Mature 5'	22.2661717	1.09886E-09
TAACAGTCTACAGCCATGGTCG	mir-132	Homo sapiens	Mature 3'	8.512251205	1.71259E-07
TAACAGTCTACAGCCATGGTCGC	mir-132	Canis familiaris	Mature 3'	6.774889515	8.21493E-06
TAACAGTCTCCAGTCACGGCC	mir-212	Homo sapiens	Mature 3'	3.346752344	0.006767632
TAAGGTGCATCTAGTGCAGATAG	mir-18a	Homo sapiens	Mature 5'	4.194554688	0.000140954
TAATGCCCCTAAAAATCCTTAT	mir-365-2//mir-365-1	Canis familiaris	Mature 3'	2.247980912	0.015622092
TAATTAGGACCTCCCTGAGCGGAGT	mir-8908a-1//mir-890	Canis familiaris	Mature 3'	90.51133397	7.22399E-18
TACCACAGGGTAGAACCACGG	mir-140	Homo sapiens	Mature 3'	7.548908324	2.14116E-10
TAGCAGCACATCATGGTTTACA	mir-15b	Homo sapiens	Mature 5'	2.062532853	0.031682345
TAGCAGCGGGAACAGTACTG	mir-503	Canis familiaris	Mature 5'	17.39807843	6.70441E-08
TAGCTTATCAGACTGATGTTGA	mir-21	Homo sapiens//Canis famil	Mature 5'	9.340264492	6.68569E-09
TAGGTAGTTTCATGTTGTTGGG	mir-196a-2	Canis familiaris	Mature 5'	99.73197073	2.093E-20
TAGGTAGTTTCCTGTTGTTGGG	mir-196b	Homo sapiens	Mature 5'	3.364740085	0.013845703
TAGTGCAATATTGCTTATAGGG	mir-454	Canis familiaris	Mature 3'	11.07914802	8.49459E-10
TAGTGCAATATTGCTTATAGGGT	mir-454	Homo sapiens	Mature 3'	4.540468027	2.72262E-05
TATGGCACTGGTAGAATTCACT	mir-183	Homo sapiens//Canis famil	Mature 5'	2.299524081	0.006767632
TATGGCTTTTCATTCCTATGTGA	mir-135b	Canis familiaris	Mature 5'	14.92542429	4.43602E-07
TATGTGCCTTTGGACTACATCG	mir-455	Homo sapiens//Canis famil	Mature 5'	2.45061123	0.021980135
TATTGCACTCGTCCCGGCCTCC	mir-92b	Homo sapiens//Canis famil	Mature 3'	34.29950586	1.74592E-16
TCAGTAAATGTTTATTGGATG	mir-545	Canis familiaris	Mature 5'	6.227861425	0.000764242
TCAGTGCATCACAGAACTTTGT	mir-148b	Homo sapiens//Canis famil	Mature 3'	2.385236989	0.010286569
TCCCTGAGACCCTTTAACCTGTGA	mir-125a	Homo sapiens	Mature 5'	19.64919399	1.44947E-14
TCCGAGCCTGGGTCTCCCTCTT				4556.297806	6.94021E-21
TCCGGTTCTCAGGGCTCCACC	mir-671	Canis familiaris	Mature 3'	7.631838218	1.41913E-07
TCCGTCTCAGTTACTTTATAGC	mir-340	Homo sapiens	Mature 3'	3.661694082	0.00143695
TCGGGGATCATCATGTCACGAGA				129.0559791	7.00795E-20
TCTCTGGGCCTGTGTCTTAGGC	mir-330	Canis familiaris	Mature 5'	31.55338817	4.09654E-13
TCTGCAGACCCGGCCTTGGCAAGC	mir-2387	Canis familiaris	Mature 3'	27.06916832	4.5078E-15
TCTGGCTCCGTGTCTTCACTCCC	mir-149	Canis familiaris	Mature 5'	7.833198951	1.8366E-09
TCTGGCTGCTATGGCCCCCTC	mir-3085	Homo sapiens	Mature 3'	70.6295648	4.22349E-16
TCTTGGGCCCCACCCCCGGAGACT	mir-8903	Canis familiaris	Mature 5'	15.22867298	7.01071E-07
TCTTTGGTTATCTAGCTGTATGA	mir-9-2//mir-9-3//mir-	Canis familiaris	Mature 5'	32.53727483	2.29961E-16
TGACCTGGGACTCGGACAGCTG	mir-3661	Homo sapiens	Mature 5'	5.471834171	0.000140954
TGAGACCTCTGGGTTCTGAGCT	mir-769	Homo sapiens	Mature 5'	6.814864757	3.6829E-09
TGAGGGGCAGAGAGCGAGACTTT	mir-423//mir-423a	Homo sapiens//Canis famil	Mature 5'	48.92697726	4.8233E-16
TGAGGTAGGAGGTTGTATAGTT	let-7e	Homo sapiens//Canis famil	Mature 5'	2.772778175	0.003258186
TGAGTGTGTGTGTGAGTGTGT	mir-574	Homo sapiens	Mature 5'	2.277115041	0.018924046
TGATTAGTTCCTGCCTGGATACA				112.9238173	1.5328E-06
TGCCTACTGAGCTGAAACACAG	mir-24-2	Homo sapiens	Mature 5'	2.467390365	0.012622277
TGCGGGGCTAGGGCTAACAGCA	mir-744	Homo sapiens	Mature 5'	10.80537235	8.30988E-10
TGGAAGACTAGTGATTTTGTTGTT	mir-7-1//mir-7-2//mir-	Homo sapiens	Mature 5'	4.310795186	0.000585655
TGGAGAGAAAGGCAGTTCCTGA	mir-185	Homo sapiens//Canis famil	Mature 5'	2.738657854	0.004809943
TGGATCGGAGCCGGGGTCCGGA	mir-8859a	Canis familiaris	Mature 3'	5.243244217	5.17873E-05
TGGCAGTGTATTGTTAGCTGGT	mir-449a	Canis familiaris	Mature 5'	17.00547964	1.88126E-08
TGGCTCTGCGAGGTCAGCTCA	mir-1842	Canis familiaris	Mature 5'	10.95815112	1.2316E-09
TGGTTCTAGACTTGCCAACTA	mir-182	Homo sapiens	Mature 3'	4.443240527	0.006800637
TGTAAACATCCCCGACTGGAAGCT	mir-30d	Canis familiaris	Mature 5'	9.428389859	3.70763E-12
TGTGACAGATTGATAACTGAAA	mir-542	Canis familiaris	Mature 3'	43.79810768	1.20233E-13
TTAATGCTAATCGTGATAGGGGTT	mir-155	Homo sapiens	Mature 5'	5.210789079	3.05654E-06
TTAGGGCCCTGGCTCCATCTCC	mir-1296	Homo sapiens	Mature 5'	3.493734041	0.000449955
TTAGGGCCCTGGCTCCATCTCCTTT	mir-1296	Canis familiaris	Mature 5'	7.642654796	0.00015479
TTATTGTCACGTTCTGATT	mir-5701-1//mir-5701	Homo sapiens	Mature 5'	10.40234264	1.43707E-05
TTCACAAAGCCCATACACTTTT	mir-350	Canis familiaris	Mature 3'	3.51287676	0.003469397
TTCACAGTGGCTAAGCTAT	mir-9985	Homo sapiens	Mature 5'	3.027654602	0.006558623
TTCACCACCTTCTCCACCCAGC	mir-197	Homo sapiens//Canis famil	Mature 3'	3.73105259	0.000164433
TTCAGATCCCAGCGGTGCCTCT	mir-5100	Homo sapiens	Mature 3'	7.196391667	0.000389146
TTCCAGCCCTGGTAGGCGCCGCG				180.9700389	9.36377E-09
TTGGAGGCGTGGGTTTT	mir-4443	Homo sapiens	Mature 5'	3.487670695	0.017971823
TTGGCCTCTGTTCCATGCCTGGGCT	mir-8829	Canis familiaris	Mature 5'	11.96634767	6.13331E-09
TTGTGTCAATATGCGATGATGT				649.2954838	4.49616E-18
TTTAGTGTGATAATGGCGTTTGA	mir-122b	Homo sapiens	Mature 5'	40.15876066	3.2989E-08
TTTGATGGATTTGCTTAGCACC	mir-8884	Canis familiaris	Mature 3'	3.647178508	0.004317098
TTTGGCAATGGTAGAACTCACACT	mir-182	Canis familiaris	Mature 5'	3.011372127	0.000181321
TTTTGCAATATGTTCCTGAAT	mir-450b	Canis familiaris	Mature 5'	19.80990298	6.01655E-08
TTTTGCAATATGTTCCTGAATA	mir-450b	Homo sapiens	Mature 5'	39.09226111	9.03347E-10
TTTTGCGATGTGTTCCTAATAT	mir-450a-1//mir-450a	Homo sapiens	Mature 5'	26.46878358	5.95779E-11
TTTTTGCGATGTGTTCCTAATA	mir-450a	Canis familiaris	Mature 5'	7.251016083	0.000111891

Ch.1 : Differentially expressed down-regulated miRNAs between Control and KMEC hypoxic cell lines.

Swquence	miR	Species	Strand	Fold Change	FDR
AAAAGCTGGGTTGAGAGGA	mir-320d-1//mir-320d-2	Homo sapiens	Mature 3'	-3.5319095	0.005272
AAAATGGTGCCCTAGTGACTACA	mir-224	Homo sapiens	Mature 3'	-342.4231	1.54E-12
AAACAAACATGGTGCACTTCTT	mir-495	Homo sapiens//Canis familiaris	Mature 3'	-198.88109	5.57E-09
AAACATTCGCGGTGCACTTCTT	mir-543	Homo sapiens//Canis familiaris	Mature 3'	-216.83663	1.23E-08
AAACCGTTACCATTACTGAGTT	mir-451	Canis familiaris	Mature 5'	-26647.838	6.52E-66
AAAGCTGGGTTGAGAAGG	mir-320e	Homo sapiens	Mature 3'	-7.4418143	0.000416
AACAATATCCTGGTGCTGAGTG	mir-338	Homo sapiens	Mature 5'	-160.5085	1.49E-19
AACACACCTATTCAAGGATTCA	mir-362	Homo sapiens	Mature 3'	-3.9596349	0.006768
AACACACCTGGTTAACCTCTTT	mir-329b	Canis familiaris	Mature 3'	-202.89242	1.07E-09
AACACTGTCTGGTAAAGATGG	mir-141	Canis familiaris	Mature 3'	-9998.424	2.35E-51
AACATAGAGGAAATTCCACGT	mir-376c	Homo sapiens	Mature 3'	-538.70179	3.41E-21
AACATTCAACCTGTCGGTGAGT	mir-181c	Homo sapiens	Mature 5'	-2.3553061	0.005605
AACCCGTAGATCCGATCTTGT	mir-99a-1//mir-99a-2	Canis familiaris	Mature 5'	-16.11089	0
AACTGTTTGCAGAGGAAACTGA	mir-452	Canis familiaris	Mature 5'	-2211.0743	1.99E-51
AATAATACATGGTTGATCTTT	mir-369	Homo sapiens	Mature 3'	-6.9803886	0.00093
AATAGCTCAGAATGTCAGTTCTG	mir-7705	Homo sapiens	Mature 5'	-8.588695	0.001049
AATATTATACAGTCAACCTCT	mir-656	Homo sapiens	Mature 3'	-12.987467	1.66E-06
AATCACTAACCACACGGCCAGG	mir-34c	Homo sapiens	Mature 3'	-25.478885	0.000485
AATCATACAGGGACATCCAGT	mir-487a	Canis familiaris	Mature 3'	-4.426171	0.005857
AATCATACAGGGACATCCAGTT	mir-487a	Homo sapiens	Mature 3'	-5.0185371	0.000314
AATCATTCACGGACAACACTT	mir-382	Homo sapiens	Mature 3'	-5.5278657	0.001237
AATCATTCACGGACAACACTTT	mir-382	Canis familiaris	Mature 3'	-6.1831815	0.00335
AATCCTTGCTACCTGGGT	mir-500b	Homo sapiens	Mature 5'	-3.7180217	0.013928
AATCGTACAGGGTCATCCACTT	mir-487b	Homo sapiens//Canis familiaris	Mature 3'	-176.89628	1.85E-15
AATGCACCTGGGCAAGGATTCA	mir-502	Homo sapiens//Canis familiaris	Mature 3'	-2.3225867	0.009527
AATGGATTTTTGGAGCAGG	mir-1246	Homo sapiens	Mature 5'	-3.8142377	0.045816
AATGGCGCCACTAGGGTTGTG	mir-652	Homo sapiens	Mature 3'	-2.5530656	0.022006
AATGGCGCCACTAGGGTTGTGC	mir-652	Canis familiaris	Mature 3'	-2.7976242	0.002974
ACAGCAGGCACAGACAGGCAGT	mir-214	Canis familiaris	Mature 3'	-20.822872	2.25E-10
ACCCGTCCCGTTCGTCCCCGGA	mir-1247	Homo sapiens	Mature 5'	-680.50678	1.98E-23
ACCTGGCATACAATGTAGATTT	mir-221	Homo sapiens	Mature 5'	-4.3610521	1.04E-05
ACGGATGTTTGAGCATGTGCTA	mir-105-1//mir-105-2	Homo sapiens	Mature 3'	-86.224681	2.67E-06
ACTCCATTTGTTTTGATGATGGA	mir-136	Homo sapiens//Canis familiaris	Mature 5'	-9404.0317	3.38E-34
ACTGGACTAGGAGTCAGAAGG	mir-378i	Homo sapiens	Mature 5'	-2.4455972	0.007764
ACTGGACTTGGAGTCAGAAGAGTGG	mir-378c	Homo sapiens	Mature 5'	-3.5067298	0.001954
ACTGGACTTGGTGTCAGATGG	mir-378h	Homo sapiens	Mature 5'	-2.9153393	0.007044
AGACCCTGGTCTGCACTCTATC	mir-504	Canis familiaris	Mature 5'	-2790.83	2.18E-24
AGAGGATACCCTTTGTATGTT	mir-1185-2//mir-1185-1	Homo sapiens	Mature 5'	-313.72167	2.27E-10
AGATCAGAAGGTGATTGTGGCT	mir-383	Homo sapiens//Canis familiaris	Mature 5'	-17.704366	2.78E-07
AGATCGACCGTGTTATATTCGC	mir-369	Homo sapiens	Mature 5'	-3.1435255	0.009633
AGCGAGGTTGCCCTTTGTATAT	mir-381	Homo sapiens	Mature 5'	-105.64719	3.65E-06
AGCTACATTGTCTGCTGGGTTT	mir-221	Canis familiaris	Mature 3'	-2.6124942	0.001916
AGGACTACGGACGGGCTGAG	mir-1844	Canis familiaris	Mature 5'	-13.176721	1.15E-06
AGGCAAGATGCTGGCATAGCT	mir-31	Homo sapiens	Mature 5'	-5.2553391	2.68E-06
AGGCAAGATGCTGGCATAGCTGT	mir-31	Canis familiaris	Mature 5'	-2.9454232	0.005645
AGGCAGTGTAATTAGCTGATTG	mir-34b	Canis familiaris	Mature 5'	-5.7610345	0.008212
AGGCAGTGTAGTTAGCTGATTGC	mir-34c	Homo sapiens//Canis familiaris	Mature 5'	-6.4951514	0.000726
AGGTTACCCGAGCAACTTTGCAT	mir-409	Homo sapiens	Mature 5'	-13.608201	3.88E-08
AGTCAACCATCCAGCTGTTTGA	mir-2483	Canis familiaris	Mature 5'	-4.1486247	0.001481
AGTGGTTCTTAACAGTTCAACAGTT	mir-203a	Homo sapiens	Mature 5'	-528.26741	2.49E-13
ATAAGACGAACAAAAGGTTTGT	mir-208b	Canis familiaris	Mature 3'	-13.943461	1.76E-05
ATAATACATGGTTAACCTCTTT	mir-655	Homo sapiens	Mature 3'	-3.87224	0.040683
ATAGTAGACCGTATAGCGTACG	mir-411	Canis familiaris	Mature 5'	-1198.0663	3.98E-43
ATATACAGGGGGAGACTCTTAT	mir-1185	Canis familiaris	Mature 3'	-285.73173	2.27E-09
ATCACATTGCCAGGGATTA	mir-23b	Canis familiaris	Mature 3'	-3.6779841	0.000434
ATCACATTGCCAGGGATTT	mir-23a	Canis familiaris	Mature 3'	-2.9991658	0.001296
ATCATAGAGGAAAATCCACGT	mir-376a-1//mir-376a-2//mir-376	Homo sapiens//Canis familiaris	Mature 3'	-1459.9305	4.07E-18
ATCATAGAGGAAAATCCATGTT	mir-376b	Canis familiaris	Mature 3'	-416.85106	9.47E-13
ATCATGATGGGCTCCTCGGTGT	mir-433	Homo sapiens//Canis familiaris	Mature 3'	-735.0236	6.55E-12
ATGCACCTGGGCAAGGATTCT	mir-500	Canis familiaris	Mature 3'	-5.8023034	1.19E-07
CAAATTCGTATCTAGGGGAATA	mir-10a	Homo sapiens	Mature 3'	-16.240479	2.93E-07
CAACCCTAGGAGAGGGTGCCATTCA	mir-652	Homo sapiens	Mature 5'	-3.633879	0.011162
CAACCTGGAGGACTCCATGCTG	mir-490	Canis familiaris	Mature 3'	-60.787486	0.000134
CAAGCTCGCTTCTATGGGTCTG	mir-99a	Homo sapiens	Mature 3'	-6.8677063	4.57E-07
CAAGTCACTAGTGGTTCCGTTT	mir-224	Canis familiaris	Mature 5'	-2813.3729	9.26E-61
CACATTACACGGTCGACCTCT	mir-323a//mir-323	Homo sapiens//Canis familiaris	Mature 3'	-17.467437	8.79E-07
CAGATATTGCACGGTTGATCTCT	mir-3958	Canis familiaris	Mature 3'	-675.7256	1.95E-18
CAGGTCGTCTTGCAGGGCTTCT	mir-431	Homo sapiens	Mature 3'	-95.794764	3.89E-05
CAGTTATCACAGTGCTGATGCT	mir-101-1	Homo sapiens	Mature 5'	-4.9016555	0.000513
CATAAAGTAGAAAGCACTACT	mir-142	Homo sapiens	Mature 5'	-240.99691	5.86E-17
CATCATCGTCTCAAATGAGTCT	mir-136	Homo sapiens	Mature 3'	-5679.6053	1.85E-38
CATCTTACCGGACAGTGCTGGA	mir-200a	Canis familiaris	Mature 5'	-567.64565	4.35E-28
CATCTTACTGGGCAGCATTGGA	mir-200b	Canis familiaris	Mature 5'	-6187.8493	2.62E-31
CATCTTCCAGTACAGTGTTGGA	mir-141	Homo sapiens	Mature 5'	-1505.5659	2.65E-34
CATTATTACTTTTGGTACGCG	mir-126	Homo sapiens//Canis familiaris	Mature 5'	-116.30158	0
CCACCAGCTGGCGTTCCCTGG	mir-1838	Canis familiaris	Mature 5'	-3.9931687	0.000982
CCCAATACACGGTCGACCTCTT	mir-323b	Homo sapiens	Mature 3'	-2.3640786	0.042989
CCCAGTGTTCAGACTACCTGTTC	mir-199a-1//mir-199a-2	Homo sapiens	Mature 5'	-4.7084091	1.96E-05
CCCAGTGTTTAGACTATCTGTTC	mir-199b	Homo sapiens	Mature 5'	-27.467715	4.41E-15
CCCATAAAGTAGAAAGCACTA	mir-142	Canis familiaris	Mature 5'	-327.67523	1.79E-42
CCCTGAGACCCTAACCTTAA	mir-4324	Homo sapiens	Mature 3'	-80.693555	1.29E-05
CCTCTGGGCCCTTCCTCCAG	mir-326	Canis familiaris	Mature 3'	-194.51657	5.81E-20
CGGGGCAGCTCAGTACAGGAT	mir-486-1//mir-486-2	Homo sapiens	Mature 3'	-4.9972687	0.002161
CGTCCCGGGGCTGCGCGAGGCA	mir-4449	Homo sapiens	Mature 3'	-8.2771565	0.012584
CGTCTTACCCAGCAGTGTTTGG	mir-200c	Homo sapiens	Mature 5'	-375.46019	4.08E-13
CGTGTATTTGACAAGCTGAGTT	mir-223	Homo sapiens	Mature 5'	-92.93153	2.37E-06
CTCCGTTTGCCTGTTTTGCTGAT	mir-1468	Canis familiaris	Mature 5'	-8.5719687	1.33E-07
CTGAAGCTCAGAGGGCTCTGAT	mir-127	Homo sapiens	Mature 5'	-1727.392	1.76E-16
CTGACCTATGAATTGACAGCC	mir-192	Homo sapiens//Canis familiaris	Mature 5'	-2.7994458	0.006559
CTGGGAGAAGGCTGTTTACTCT	mir-30c-2	Homo sapiens	Mature 3'	-3.2141231	0.001762
CTTGGCACCTAGTAAGCACT	mir-1271	Canis familiaris	Mature 5'	-2.0470759	0.02061
CTTTCAGTCGGATGTTTACAGC	mir-30e	Homo sapiens//Canis familiaris	Mature 3'	-2.8253001	0.004046
CTTTCAGTCGGATGTTTGCAGC	mir-30a	Homo sapiens	Mature 3'	-4.7552838	8.01E-06
GAAGTTGTTCGTGGTGGATTCG	mir-382	Homo sapiens	Mature 5'	-2.9925175	0.01839
GATTTCAGTGGAGTGAAGTTC	mir-205	Homo sapiens	Mature 3'	-155.72306	6.78E-16
GCCTGCTGGGGTGGAACCTGGT	mir-370	Canis familiaris	Mature 3'	-259.45913	1.02E-11
GGATATCATCATATACTGTAAG	mir-144	Homo sapiens	Mature 5'	-679.26877	1.11E-25
GGATTCCTGGAAATACTGTTCT	mir-145	Homo sapiens	Mature 3'	-11.247406	2.63E-08
GGTGCAGTGCTGCATCTCTGGT	mir-143	Homo sapiens	Mature 5'	-2.2404493	0.027708
GTAGATTCTCCTTCTATGAGTA	mir-376a-1	Homo sapiens	Mature 5'	-1711.2878	7.49E-19

GTCATACACGGCTCTCCTCTCT	mir-485	Homo sapiens	Mature 3'	-5.2321761	0.003482
GTGAAATGTTTAGGACCACTAG	mir-203a//mir-203	Homo sapiens//Canis familiaris	Mature 3'	-702.84477	0
GTGACATCACATATACGGCGGC	mir-489	Canis familiaris	Mature 3'	-65.639728	9.06E-05
GTGGTTATCCCTGCTGTGTTCG	mir-487a	Homo sapiens	Mature 5'	-3.4686437	0.039907
GTGTGCGGAAATGCTTCTGCT	mir-147b	Homo sapiens	Mature 3'	-157.15706	1.29E-19
GTGTGCGGAAATGCTTCTGCTA	mir-147	Canis familiaris	Mature 3'	-120.61973	7.47E-21
TAAAGTGCTTATAGTGCAGGTAG	mir-20a	Homo sapiens//Canis familiaris	Mature 5'	-2.3596867	0.010287
TAACACTGTCTGGTAAAGATGG	mir-141	Homo sapiens	Mature 3'	-19876.507	5.43E-81
TAACACTGTCTGGTAACGATGT	mir-200a	Homo sapiens	Mature 3'	-1417.6566	9.57E-55
TAAGGCACGCGGTGAATGCCA	mir-124-3//mir-124-1//mir-124-2	Canis familiaris	Mature 3'	-52.338279	0.000338
TAATACTGCCGGGTAATGATGGA	mir-200c	Homo sapiens//Canis familiaris	Mature 3'	-7110.9329	1.16E-68
TAATACTGCCTGGTAATGATGA	mir-200b	Homo sapiens	Mature 3'	-1948.7529	1.3E-69
TAATACTGTCTGGTAATGCCGT	mir-429	Canis familiaris	Mature 3'	-784.53829	6.22E-51
TACAGTACTGTGATAACTGA	mir-101-2//mir-101-1	Canis familiaris	Mature 3'	-8.4547368	6.55E-06
TACAGTACTGTGATAACTGAA	mir-101-1//mir-101-2	Homo sapiens	Mature 3'	-4.8138914	0.000207
TACAGTATAGATGATGTACT	mir-144	Homo sapiens	Mature 3'	-26906.404	4.43E-40
TACAGTTGTTCAACCAGTTACT	mir-582	Canis familiaris	Mature 5'	-2.7556317	0.033078
TACCCTGTAGATCCGAATTTGT	mir-10a	Canis familiaris	Mature 5'	-27.403866	0
TACCCTGTAGATCCGAATTTGTG	mir-10a	Homo sapiens	Mature 5'	-8.2494761	7.11E-09
TAGCACCATTTGAAATCGGTTA	mir-29c//mir-29c-1//mir-29c-2	Homo sapiens//Canis familiaris	Mature 3'	-20.952595	1.2E-11
TAGCAGCACAGAAATATTGGC	mir-195	Homo sapiens	Mature 5'	-3.9551814	0.00022
TAGCAGCACAGAAATATTGGCA	mir-195	Canis familiaris	Mature 5'	-2.1221222	0.030146
TAGGCCATGGTAGATAGAGATGG	mir-1836	Canis familiaris	Mature 5'	-23.487273	0.000256
TAGTAGACCGTATAGCGTACG	mir-411	Homo sapiens	Mature 5'	-1218.0722	1.45E-35
TATACAAGGGCAAGCTCTCTGT	mir-381	Canis familiaris	Mature 3'	-836.17273	4.29E-31
TATGTAACACGGTCCACTAACC	mir-411	Homo sapiens	Mature 3'	-2112.4704	5.24E-19
TATGTAACATGGTCCACTAACT	mir-379	Homo sapiens	Mature 3'	-468.16992	2E-17
TATGTAATATGGTCCACGTCT	mir-380	Canis familiaris	Mature 3'	-127.50655	1.57E-17
TATGTCTGCTGACCATCACCTT	mir-654	Homo sapiens	Mature 3'	-250.191	3.08E-13
TATTGCACATTACTAAGTTGCA	mir-32	Homo sapiens	Mature 5'	-4.5946463	0.005811
TATTGCACATTACTAAGTTGCAT	mir-32	Canis familiaris	Mature 5'	-3.8880345	0.013798
TCAAATGCTCAGACTCCTGT	mir-105a	Canis familiaris	Mature 5'	-93.469578	8.28E-06
TCAAATGCTCAGACTCCTGTGGT	mir-105-1//mir-105-2	Homo sapiens	Mature 5'	-410.69632	2.23E-13
TCAACAAAATCACTGATGCTGGA	mir-3065	Homo sapiens	Mature 5'	-8.9388307	0.001246
TCAAGTCACTAGTGGTTCCGTTTAG	mir-224	Homo sapiens	Mature 5'	-2235.9325	7.01E-34
TCACAAGTCAGGCTCTTGGGAC	mir-125b-2	Homo sapiens	Mature 3'	-2.0904765	0.025677
TCACTCCTCCCCTCCCGTCTT	mir-483	Canis familiaris	Mature 3'	-5.8169607	0.00556
TCAGTGCATGACAGAACTTGG	mir-152	Homo sapiens//Canis familiaris	Mature 3'	-2.2283898	0.017607
TCCAGCATCAGTGATTTTGTTG	mir-338	Homo sapiens	Mature 3'	-1871.9167	3.19E-40
TCCAGCATCAGTGATTTTGTTGA	mir-338	Canis familiaris	Mature 3'	-5183.4757	7.17E-48
TCCATTACACTACCCTGCCTCT	mir-885	Canis familiaris	Mature 5'	-99.065602	6.75E-12
TCCCTGAGACCCTAACTTGTGA	mir-125b-1//mir-125b-2	Homo sapiens//Canis familiaris	Mature 5'	-2.4516046	0.00445
TCCCTGAGACCCTTTAACCTGT	mir-125a	Canis familiaris	Mature 5'	-6.4221675	2.23E-08
TCCTGTACTGAGCTGCCCCGA	mir-486	Canis familiaris	Mature 5'	-38.962348	0
TCCTGTACTGAGCTGCCCCGAG	mir-486-1//mir-486-2	Homo sapiens	Mature 5'	-12.772249	1.64E-09
TCCTTCATTCCACCGGAGTCTG	mir-205	Canis familiaris	Mature 5'	-658.54587	0
TCGGATCCGTCTGAGCTTGGCT	mir-127	Homo sapiens//Canis familiaris	Mature 3'	-2126.5805	5.17E-53
TCGGGGCAGCTCAGTACAGGAT	mir-486	Canis familiaris	Mature 3'	-3.9270626	0.011594
TCGTACCGTGAGTAATAATGCG	mir-126	Homo sapiens	Mature 3'	-206.21836	0
TCGTGTCTTGTGTTGCAGCCGG	mir-187	Canis familiaris	Mature 3'	-3.3393822	0.003125
TCTACAGTGCACGTGTCTCCAGT	mir-139	Homo sapiens	Mature 5'	-90.135642	1.74E-22
TCTCCCAACCCTTGTACCAGTG	mir-150	Canis familiaris	Mature 5'	-585.80803	2.71E-43
TCTTGGAGTAGGTCATTGGGTGG	mir-432	Canis familiaris	Mature 5'	-766.73091	1.88E-20
TGAAACATACACGGGAAACCTC	mir-494	Canis familiaris	Mature 3'	-158.37679	2.79E-12
TGAAGGTCTACTGTGTGCCAG	mir-493	Canis familiaris	Mature 3'	-263.94884	1.36E-09
TGAAGGTCTACTGTGTGCCAGG	mir-493	Homo sapiens	Mature 3'	-196.74646	1.07E-07
TGACCGATTTCTCCTGGTGTTC	mir-29c	Homo sapiens	Mature 5'	-11.356389	3.86E-08
TGAGAACTGAATTCCATAGGCTG	mir-146b	Homo sapiens	Mature 5'	-2.4522714	0.030146
TGAGAACTGAATTCCATGGGTT	mir-146a	Homo sapiens//Canis familiaris	Mature 5'	-79.827761	7.49E-31
TGAGATGAAGCACTGTAGCTC	mir-143	Homo sapiens//Canis familiaris	Mature 3'	-2.1633537	0.027226
TGAGGTAGTAGGTTGTATAGTT	let-7a-1//let-7a-3//let-7a-2	Homo sapiens//Canis familiaris	Mature 5'	-2.3268575	0.003216
TGAGGTAGTAGGTTGTATGGTT	let-7c	Homo sapiens//Canis familiaris	Mature 5'	-7.2754374	4.99E-09
TGAGGTAGTAGGTTGTGTGGTT	let-7b	Canis familiaris	Mature 5'	-2.7380599	0.003551
TGAGGTAGTAGTTTGTACAGTT	let-7g	Homo sapiens//Canis familiaris	Mature 5'	-3.560773	6.17E-05
TGATATGTTTGATATTGGGTT	mir-190b	Canis familiaris	Mature 5'	-5.2864634	0.000328
TGATATGTTTGATATTGGGTTG	mir-190b	Homo sapiens	Mature 5'	-3.9396608	0.001023
TGCACCCTGAGAGCTGGAGCAG	mir-1835	Canis familiaris	Mature 5'	-74.792328	1.94E-05
TGCCTGTCTACACTTGCTGTGC	mir-214	Homo sapiens	Mature 5'	-72.69273	7.35E-19
TGCTATGCCAACATATTGCCAT	mir-31	Homo sapiens	Mature 3'	-3.4780604	0.008443
TGGAATGTAAAGAAGTATGTA	mir-1-1//mir-1-2	Canis familiaris	Mature 3'	-24.319583	0.000456
TGGAATGTAAAGAAGTATGTAT	mir-1-2//mir-1-1	Homo sapiens	Mature 3'	-19.969163	4.62E-05
TGGACGGAGAACTGATAAGGGT	mir-184	Canis familiaris	Mature 3'	-5.8255518	0.003852
TGGAGACGCGGCCCTGTTGGAA	mir-139	Canis familiaris	Mature 3'	-26.709213	3.4E-06
TGGCAGTGTCTTAGCTGGTTGT	mir-34a	Homo sapiens//Canis familiaris	Mature 5'	-3.9176176	0.000217
TGGCTCAGTTCAGCAGGAACAGG	mir-24-1//mir-24-2	Canis familiaris	Mature 3'	-2.7974975	0.000822
TGGTAGACTATGGAACGTAGG	mir-379	Homo sapiens//Canis familiaris	Mature 5'	-9562.5175	5.88E-29
TGGTTTACCGTCCCACATACAT	mir-299	Canis familiaris	Mature 5'	-64.995228	2.39E-11
TGTAAACATCCTACACTCTCAGC	mir-30c-2//mir-30c-1	Homo sapiens	Mature 5'	-6.3314061	9.28E-08
TGTAAACATCCTCGACTGGAAG	mir-30a	Homo sapiens	Mature 5'	-46.511557	0
TGTAACAGCAACTCCATGTGGA	mir-194-2//mir-194	Homo sapiens//Canis familiaris	Mature 5'	-2.3946027	0.02061
TGTAGTGTTTCCTACTTTATGGA	mir-142	Homo sapiens	Mature 3'	-56.808358	5.05E-15
TGTCAGTTTGTCAAATACCCC	mir-223	Canis familiaris	Mature 3'	-16.481371	2.62E-10
TGTCAGTTTGTCAAATACCCCA	mir-223	Homo sapiens	Mature 3'	-19.889935	5.58E-09
TGTGCAAATCCATGCAAAACTG	mir-19b-1//mir-19b-2	Canis familiaris	Mature 3'	-5.4769398	1.2E-05
TTAATATCGGACAACCATTGT	mir-889	Homo sapiens	Mature 3'	-11.420436	1.55E-05
TTAATATCGGACAACCATTGTT	mir-889	Canis familiaris	Mature 3'	-10.928593	1.78E-05
TTACAGTTGTTCAACCAGTTACT	mir-582	Homo sapiens	Mature 5'	-3.3148174	0.003852
TTATAATACAACCTGATAAGT	mir-374a	Canis familiaris	Mature 5'	-3.8831802	0.002176
TTCAACGGGTATTTATTGAGCA	mir-95	Canis familiaris	Mature 3'	-15.396166	7.77E-12
TTCAAGTAATCCAGGATAGGCT	mir-26a-1//mir-26a-2	Homo sapiens//Canis familiaris	Mature 5'	-2.9276308	0.000191
TTCAAGTAATTCAGGATAGGT	mir-26b	Homo sapiens	Mature 5'	-12.587778	2.1E-11
TTCAAGTAATTCAGGATAGGTT	mir-26b	Canis familiaris	Mature 5'	-3.8645909	0.000103
TTCCCTTTGTCATCCTATGCCT	mir-204	Homo sapiens//Canis familiaris	Mature 5'	-2.0907962	0.021496
TTCCCTTTGTCATCCTTTGCCT	mir-211	Canis familiaris	Mature 5'	-1570.8241	5.16E-12
TTGGTCCCCTTCAACCAGCTGT	mir-133a	Canis familiaris	Mature 3'	-3.9711323	0.043941
TTGTACATGGTAGGCTTTCATT	mir-493	Homo sapiens	Mature 5'	-1069.9301	4.41E-15
TTGTGCTTGATCTAACCATGT	mir-218-1//mir-218-2	Canis familiaris	Mature 5'	-16.874855	7.22E-08
TTTGTGACCTGGTCCACTAACC	mir-758	Canis familiaris	Mature 3'	-1104.5142	8.63E-14
TTTGTTCGTTCGGCTCGCGTGA	mir-375	Canis familiaris	Mature 3'	-5.4487511	1.94E-06
TTTTTTGCTGGAACATTTCTGG	mir-9983	Homo sapiens	Mature 3'	-98.387767	3.89E-06

Ch.1 : Differentially expressed up-regulated miRNAs between Control and LMEC hypoxic cell lines.

Sequence	miR	Species	Strand	Fold Change	FDR
AAAAGCTGGGTTGAGAGGGCGA	mir-320a//mir-	Homo sapiens	Mature 3'	2.472987951	8.322E-07
AAAGTTCTGAGACACTCCGACT	mir-148a	Homo sapiens	Mature 5'	3.303108061	8.405E-10
AACATTCAACCTGTCGGTGAGTT	mir-181c	Canis familiar	Mature 5'	2.742581447	7.219E-09
AACATTCATTGTTGTCGGTGGGT	mir-181d	Homo sapiens	Mature 5'	5.094725431	1.17E-20
AACCATCGACCGTTGAGTGGAC	mir-181c	Homo sapiens	Mature 3'	4.854312322	3.301E-19
AAGCCCTTACCCCAAAAAGCAT	mir-129-2	Homo sapiens	Mature 3'	93.11576968	3.308E-70
AAGCTGCCAGTTGAAGAACTGT	mir-22	Homo sapiens	Mature 3'	2.184413013	1.343E-05
AAGGAGCTCACAGTCTATTGAG	mir-28	Homo sapiens	Mature 5'	5.114861036	4.965E-21
AAGGAGCTTACAATCTAGCTGGG	mir-708	Homo sapiens	Mature 5'	3.011858337	1.964E-09
AAGTTCTGTTATACACTCAGGC	mir-148b	Homo sapiens	Mature 5'	3.717613795	6.859E-11
AATGACACGATCACTCCCGTTGA	mir-425	Homo sapiens	Mature 5'	2.340793791	2.725E-06
ACAAAAAAAAAAGCCCAACCCT	mir-3613	Homo sapiens	Mature 3'	2.398117439	0.0039262
ACAGGTGAGGTTCTTGGGAGCC	mir-125a	Homo sapiens	Mature 3'	7.431686842	8.417E-18
ACCGTGGCTTTCGATTGTTACT	mir-132	Homo sapiens	Mature 5'	10.51804389	4.835E-18
ACCTTGGCTCTAGACTGCTTACT	mir-212	Canis familiar	Mature 5'	10.38014348	2.582E-21
ACGGGTTAGGCTCTTGGGAGCT	mir-125b-1	Homo sapiens	Mature 3'	4.987430892	4.887E-16
ACGTTGGCTCTGGTGGTG	mir-1306	Homo sapiens	Mature 3'	35.04692817	4.681E-28
ACTCAAACTGTGGGGGCACT	mir-371a	Homo sapiens	Mature 5'	171.6747466	6.32E-13
ACTCGGCGTGGCGTCGGTCGTG	mir-1307	Homo sapiens	Mature 3'	2.568504497	1.25E-05
ACTCTTTCCCTGTTGCACTAC	mir-130b	Homo sapiens	Mature 5'	14.2267583	5.978E-27
ACTGCAGTGAAGGCACTTGTAG	mir-17	Homo sapiens	Mature 3'	2.469588136	3.541E-06
ACTGCCCTAAGTGCTCCTTCTGG	mir-18a	Homo sapiens	Mature 3'	6.69779449	4.933E-22
ACTGGACTTGGAGGCAGAA	mir-378b	Homo sapiens	Mature 3'	13.21745063	5.873E-06
ACTGGAGGTCTCTGTCTGGCTT	mir-1843	Canis familiar	Mature 5'	5.588729132	2.007E-10
ACTGTGCGTGTGACAGCGGCTGA	mir-210	Canis familiar	Mature 3'	25.60904736	9.419E-81
AGACCCTGGTCTGCACTCTATC	mir-504	Canis familiar	Mature 3'	6.007803506	4.515E-18
AGAGCTTAGCTGATTGGTGAAC	mir-27b	Homo sapiens	Mature 5'	8.367793848	4.46E-25
AGAGGAAAGCTGGACGGCAAGC	mir-1841	Canis familiar	Mature 5'	48.09945919	2.176E-44
AGAGGTAGTAGGTTGCATAGTT	let-7d	Homo sapiens	Mature 5'	5.243638111	8.257E-21
AGAGTTGAGTCTGGACGTCCCG	mir-219a-1	Homo sapiens	Mature 3'	5.727574394	1.382E-13
AGCTACATCTGGCTACTGGGT	mir-222	Homo sapiens	Mature 3'	16.10546548	9.461E-61
AGCTACATTGTCTGCTGGGTTT	mir-221	Canis familiar	Mature 3'	9.485630944	5.803E-39
AGCTACATTGTCTGCTGGGTTTC	mir-221	Homo sapiens	Mature 3'	2.470091078	3.175E-07
AGCTGGTGTTGTGAATCAGGCCG	mir-138-2//mir	Homo sapiens	Mature 5'	2.333784932	6.506E-05
AGGAAGCCCTGGAGGGGCTGGAG	mir-671	Homo sapiens	Mature 5'	3.408290389	1.803E-08
AGGACTACGGACGGGCTGAG	mir-1844	Canis familiar	Mature 5'	2.263858298	0.0011518
AGGCAGTGTATTGTTAGCTGGC	mir-449b	Homo sapiens	Mature 5'	15.0405761	2.198E-09
AGGCGGAGACTTGGGCAATTG	mir-25	Homo sapiens	Mature 5'	15.54737352	2.482E-35
AGGGACGGGACGCGGTGCAGTG	mir-92b	Homo sapiens	Mature 5'	12.60246814	0.000408
AGGGACTTTCAGGGGCAGCTGT	mir-365b	Homo sapiens	Mature 5'	3.896713415	7.471E-08
AGGGACTTTTGGGGGCAGATGTG	mir-365a	Homo sapiens	Mature 5'	2.569566655	0.0042324
AGGGCTTAGCTGCTTGTGAGCA	mir-27a	Homo sapiens	Mature 5'	4.044521954	8.844E-13
AGGGGCTGGCTTTCCTCTGGTC	mir-185	Homo sapiens	Mature 3'	3.166830624	2.465E-06
AGGTTCTGTGATACACTCCGACT	mir-152	Homo sapiens	Mature 5'	3.979737403	2.942E-08
AGGTTGGGATCGGTTGCAATGCT	mir-92a-1	Homo sapiens	Mature 5'	2.085799123	0.0034512
AGTGCCTGCTATGTGCCAGGCA	mir-1271	Homo sapiens	Mature 3'	6.441422684	1.338E-11
AGTGGGGAACCCTTCCATGAGG	mir-491	Homo sapiens	Mature 5'	16.90260762	5.494E-24
AGTTTTGCATAGTTGCACTACA	mir-19a	Homo sapiens	Mature 5'	4.965438931	1.172E-06
ATAAAGCTAGATAACCGAAAGT	mir-9-1//mir-9	Homo sapiens	Mature 3'	21.84827676	4.088E-20
ATCAACAGACATTAATTGGGCG	mir-421	Canis familiar	Mature 3'	6.374214047	5.114E-20
ATCAACAGACATTAATTGGGCGC	mir-421	Homo sapiens	Mature 3'	3.578686227	2.457E-09
ATCACATTGCCAGGGATTA	mir-23b	Canis familiar	Mature 3'	2.363095309	1.552E-05
ATCACATTGCCAGGGATTT	mir-23a	Canis familiar	Mature 3'	4.464923209	1.033E-15
ATCCCCAGATACAATGGACAA	mir-2355	Homo sapiens	Mature 5'	7.076946106	2.483E-21
ATCGGGAATGTCGTGTCCGCCC	mir-425	Homo sapiens	Mature 3'	3.223270434	4.527E-09
ATGGATAAGGCTTTGGCTT	mir-1261	Homo sapiens	Mature 5'	2.127389321	0.0289771
ATGTAGGGCTAAAAGCCATGGG	mir-135b	Homo sapiens	Mature 3'	73.40948113	8.257E-21
ATTGTCCTTGCTGTTTGGAGAT	mir-2355	Homo sapiens	Mature 3'	8.529270301	7.844E-17
ATTGTGTCAATATGCGATGATGT	mir-592	Canis familiar	Mature 5'	477.5430522	3.859E-50
ATTTGTGCTTGGCTCTGTCAC	mir-2113	Homo sapiens	Mature 3'	232.8945398	2.78E-46
CAAAACGTGAGGCGCTGCTAT	mir-424	Homo sapiens	Mature 3'	28.80732598	1.501E-24
CAACAAATCACAGTCTGCCATA	mir-7-1	Homo sapiens	Mature 3'	4.185443182	1.083E-10
CAACACCAGTCGATGGGCTGT	mir-21	Homo sapiens	Mature 3'	10.73803951	2.175E-10
CAACGGAATCCCAAAAGCAGCT	mir-191	Homo sapiens	Mature 5'	3.053913678	1.74E-11
CAACTAGACTGTGAGCTTCTAG	mir-708	Homo sapiens	Mature 3'	7.792567286	1.417E-25
CAAGCTCGTGTCTGTGGGTCCG	mir-99b	Homo sapiens	Mature 3'	8.022318008	2.465E-06
CAAGCTTGTATCTATAGGTATG	mir-100	Homo sapiens	Mature 3'	4.734342851	0.0001347
CACAGCAAGTGTAGACAGGCA	mir-3120	Homo sapiens	Mature 3'	294.3440737	3.469E-41
CACCAGGCATTGTGGTCTCC	mir-1911	Homo sapiens	Mature 3'	404.7651955	8.722E-20
CACGCTCATGCACACACCCACA	mir-574	Homo sapiens	Mature 3'	3.613551642	4.038E-12
CACTAGATTGTGAGCTCCTGGA	mir-28	Homo sapiens	Mature 3'	6.431868659	2.215E-28
CAGCAGCAATTCATGTTTTGAA	mir-424	Homo sapiens	Mature 5'	4.45175402	1.561E-10
CAGGCCATATTGTGCTGCCTCA	mir-15a	Homo sapiens	Mature 3'	2.610672369	0.012286
CAGTGCAATAGTATTGTCAAAGC	mir-301a	Canis familiar	Mature 3'	3.648985548	2.087E-13
CAGTGCAATGATATTGTCAAAGC	mir-301b	Canis familiar	Mature 3'	28.24151403	5.038E-50
CAGTGCAATGATGAAAGGGCAT	mir-130b	Homo sapiens	Mature 3'	55.57380001	4.117E-80
CAGTGCAATGTTAAAAGGGCAT	mir-130a	Homo sapiens	Mature 3'	2.726707757	3.842E-09
CAGTGCCTCGGCAGTGCAGCCC	mir-33b	Homo sapiens	Mature 3'	2.011181155	0.0035321
CATCCATTTCTTTCACCTGGGGA	mir-8902	Canis familiar	Mature 5'	90.93784431	1.244E-07
CATCTGGGCAACTGACTGAAC	mir-1298	Homo sapiens	Mature 3'	42.04329569	3.131E-14
CCACCTCCCCTGCAAACGTCC	mir-1306	Canis familiar	Mature 5'	5.96178524	1.054E-15
CCACCTCCCCTGCAAACGTCCA	mir-1306	Homo sapiens	Mature 5'	2.982131351	8.268E-07
CCAGTTACCGCTTCCGCTACCGC	mir-935	Homo sapiens	Mature 3'	481.3698837	3.86E-81
CCCACTGCCCCAGGTGCTGCTGG	mir-324	Homo sapiens	Mature 3'	6.802243445	4.241E-17
CCCCACCTCCTCTCTCCTCAG	mir-1224	Homo sapiens	Mature 3'	5.183147622	7.22E-06
CCGCACTGTGGGTACTTGCTGC	mir-106b	Homo sapiens	Mature 3'	2.762032452	2.023E-08
CCTCCCTTTCTCGGACGTCGCCG	mir-8865	Canis familiar	Mature 3'	67.16878921	5.874E-49
CCTGTCTGTGCCTGCTGTACA	mir-3120	Homo sapiens	Mature 5'	71.88293882	1.521E-06
CCTGTGCCTTTTACCTCTTTAA	mir-6529	Canis familiar	Mature 3'	7.43610098	4.852E-13
CGAATCATTATTTGCTGCTCTA	mir-15b	Homo sapiens	Mature 3'	6.482568571	1.056E-16
CGCATCCCCTAGGGCATTGGTG	mir-324	Homo sapiens	Mature 5'	2.402378845	0.0003169
CGCCGCGCGCATCGGCTCAGC	mir-6869	Homo sapiens	Mature 3'	3.802646087	0.0155893
CGGCAACAAGAAACTGCCTGAG	mir-196a-2	Homo sapiens	Mature 3'	126.0908684	8.851E-09
CGGGGCCGTAGCACTGTCTGAGA	mir-128-1	Homo sapiens	Mature 5'	2.394638495	0.0001336
CGGGGTTTTGAGGGCGAGATGA	mir-193b	Homo sapiens	Mature 5'	2.458857852	0.0002165
CGGGTAGAGAGGGCAGTGGGAG	mir-197	Homo sapiens	Mature 5'	27.69757848	2.49E-17
CGTCAACACTTGCTGGTTTCCT	mir-505	Homo sapiens	Mature 3'	2.03850033	0.0002912
CTATACAACTTACTACTTTCCC	mir-98	Homo sapiens	Mature 3'	2.041550471	0.0006326
CTATACGACCTGCTGCCTTTCT	let-7d	Homo sapiens	Mature 3'	3.619902462	6.018E-11
CTCACTGATCAATGAATGCA	mir-181b-2	Homo sapiens	Mature 3'	3.105545661	0.0002448

CTCAGTAGCCAGTGTAGATCCT	mir-222	Homo sapien	Mature 5'	12.45569313	1.477E-28
CTCCCACATGCAGGGTTTGCA	mir-188	Homo sapien	Mature 3'	3.238966706	2.804E-05
CTGACCTATGAATTGACAGCC	mir-192	Homo sapien	Mature 5'	3.676758032	9.542E-14
CTGCCCTGGCCCGAGGGACCGA	mir-874	Canis familiar	Mature 3'	2.610097093	2.682E-06
CTGCCTCTGGCTTGGCCTGCAG	mir-8876	Canis familiar	Mature 3'	2.392787952	0.0017778
CTGGGAGGTGGATGTTTACTTC	mir-30b	Homo sapien	Mature 3'	4.60073543	9.015E-10
CTGGGATCTCTGGGGTCTTGGTT	mir-769	Canis familiar	Mature 3'	6.827008341	1.354E-13
CTGTACAGCCTCCTAGCTTTCC	let-7a-2	Homo sapien	Mature 3'	2.988764384	0.0012285
CTGTGCGTGTGACAGCGGCTGA	mir-210	Homo sapien	Mature 3'	7.064577853	5.844E-28
CTGTGGCCTCTGGGTGTGTACCC	mir-7180	Canis familiar	Mature 3'	2.917012838	6.532E-06
CTTATGCAAGATTCCCTTCTA	mir-491	Canis familiar	Mature 3'	45.3591052	5.182E-19
CTTATGCAAGATTCCCTTCTAC	mir-491	Homo sapien	Mature 3'	13.5262266	2.084E-12
CTTTTTGCGGTCTGGGCTTGC	mir-129-1//mir	Homo sapien	Mature 5'	135.1917263	2.094E-73
GACTGAGCCACCTAGGTACCCCT	mir-8890	Canis familiar	Mature 5'	30.77389572	1.471E-38
GAGAGATCAGAGGCGCAGAGTG	mir-6529	Homo sapien	Mature 5'	67.27362303	3.148E-93
GCAAAGCACACGGCCTGCAGAG	mir-330	Homo sapien	Mature 3'	12.06786821	1.298E-28
GCCTTCTCTTCCCGGTTCTTCC	mir-320a	Homo sapien	Mature 5'	3.850587089	0.0008912
GCGGGGCTGGGCGCGCG	mir-4508	Homo sapien	Mature 5'	4.303277901	1.248E-05
GCTATTTCACGACACCAGGGTT	mir-138-2	Homo sapien	Mature 3'	5.314118705	0.0012309
GCTCTGACTTTATTGCACTACT	mir-301a	Homo sapien	Mature 5'	6.442904884	4.227E-07
GCTCTTTTCACATTGTGCTACT	mir-130a	Homo sapien	Mature 5'	3.251969019	0.0010005
GCTGGTTTCATATGGTGGTTTAGA	mir-29b-1	Homo sapien	Mature 5'	5.296015629	3.393E-09
GGGAGCCAGGAAGTATTGATGT	mir-505	Canis familiar	Mature 5'	12.55166711	4.738E-20
GGGGCTGGGCGCGCGCC	mir-4492	Homo sapien	Mature 3'	2.33846096	0.023369
GGGGGTCCCCGGAGCTCGG	mir-615	Canis familiar	Mature 5'	176.1556292	3.597E-12
GGGGTTCCTGGGGATGGGATTT	mir-23a	Homo sapien	Mature 5'	3.051811037	0.0009311
GGTCGGATTCCGTGCCTGGAGT	mir-8859b	Canis familiar	Mature 3'	5.69437474	4.094E-12
GTAGAGGAGATGGCGCAGGG	mir-877	Homo sapien	Mature 5'	78.35767971	3.879E-66
GTGAGGACTCGGGAGGTGG	mir-1224	Homo sapien	Mature 5'	46.35897942	2.808E-39
GTGCATTGCTGTTGCATTGC	mir-33b	Canis familiar	Mature 5'	4.23587261	1.274E-11
GTTCCTGCTGAACTGAGCCAG	mir-3074	Homo sapien	Mature 5'	8.034239957	1.042E-06
TAAAGTGCTGACAGTGCAGAT	mir-106b	Homo sapien	Mature 5'	2.130136531	7.81E-05
TAACAGTCTACAGCCATGGTCG	mir-132	Homo sapien	Mature 3'	6.341203875	3.152E-18
TAACAGTCTACAGCCATGGTCGC	mir-132	Canis familiar	Mature 3'	8.988457728	1.339E-23
TAACAGTCTCCAGTCACGGCC	mir-212	Homo sapien	Mature 3'	27.89604208	2.182E-35
TAAGGTGCATCTAGTGCAGATA	mir-18a	Canis familiar	Mature 5'	3.612578683	2.175E-10
TAAGGTGCATCTAGTGCAGATAG	mir-18a	Homo sapien	Mature 5'	4.367722276	2.697E-12
TAATTAGGACCTCCCTGAGCGGA	mir-8908a-1//n	Canis familiar	Mature 3'	11.29662079	4.637E-10
TACAGTTGTTCAACCAGTTACT	mir-582	Canis familiar	Mature 5'	4.027749797	2.962E-09
TAGCAGCGGGAACAGTACTG	mir-503	Canis familiar	Mature 5'	13.59705541	1.3E-10
TAGCTTATCAGACTGATGTTGA	mir-21	Homo sapien	Mature 5'	6.739773289	7.753E-29
TAGGTAGTTTCATGTTGTTGGG	mir-196a-2//m	Canis familiar	Mature 5'	263.4304968	2.445E-76
TAGGTAGTTTCCTGTTGTTGGG	mir-196b	Homo sapien	Mature 5'	38.16119686	4.303E-32
TAGGTAGTTTCCTGTTGTTGGGA	mir-196b	Canis familiar	Mature 5'	29.65620808	4.876E-29
TAGTGCAATATTGCTTATAGGG	mir-454	Canis familiar	Mature 3'	9.590861078	1.142E-21
TAGTGCAATATTGCTTATAGGGT	mir-454	Homo sapien	Mature 3'	2.804418416	3.846E-07
TATGGCTTTTCATTCCTATGTGA	mir-135b	Canis familiar	Mature 5'	19.33517685	5.989E-27
TATTGCACTCGTCCCGGCCTCC	mir-92b	Homo sapien	Mature 3'	18.13012739	5.077E-43
TCAACAAAATCACTGATGCTGGA	mir-3065	Homo sapien	Mature 5'	10.771749	3.054E-17
TCAAGAGCAATAACGAAAAATGT	mir-335	Canis familiar	Mature 5'	3.113222335	5.694E-08
TCACAGTGAACCGGTCTCTTT	mir-128-1//mir	Homo sapien	Mature 3'	2.485943626	4.747E-07
TCACGTGACGGGCCTCGGCG	mir-1840	Canis familiar	Mature 3'	2.407275287	0.0015534
TCAGCACCAGGATATTGTTGGAG	mir-3065	Homo sapien	Mature 3'	2.504777805	0.0296846
TCCCTGAGACCCTTTAACCTGTG	mir-125a	Homo sapien	Mature 5'	7.329337586	4.709E-24
TCCCTGTCCTCCAGGAGCT	mir-339-1	Canis familiar	Mature 5'	3.03568976	9.47E-10
TCCGAGCCTGGGTCTCCCTCTT	mir-615	Homo sapien	Mature 3'	553.7399923	4.951E-25
TCCGGTTCTCAGGGCTCCACC	mir-671	Canis familiar	Mature 3'	3.082172466	6.551E-09
TCGACCGGACCTCGACCGGCT	mir-1307	Homo sapien	Mature 5'	2.273502564	4.995E-06
TCGGGGATCATCATGTCACGAGA	mir-542	Homo sapien	Mature 5'	34.79489675	9.541E-19
TCGTGTCTTGTGTTGCAGCCGG	mir-187	Canis familiar	Mature 3'	4.189675144	3.398E-10
TCTCTGGGCCTGTGTCTTAGGC	mir-330	Canis familiar	Mature 5'	61.54212093	3.529E-88
TCTGCAGACCCGGCCTTGGCAAC	mir-2387	Canis familiar	Mature 3'	3.051610756	1.961E-06
TCTGGACTTCAGGAGACAGCT	mir-8826	Canis familiar	Mature 5'	910.046172	9.187E-92
TCTGGCTGCTATGGCCCCCTC	mir-3085	Homo sapien	Mature 3'	7.67350425	2.46E-07
TCTGGCTGTTGTGGTGTGCAA	mir-3064	Homo sapien	Mature 5'	5.027748524	0.0042193
TCTGTGAGACCAAAGAACTACT	mir-4677	Homo sapien	Mature 3'	8.311140622	4.565E-06
TCTTGGGCCCCACCCCCGGAGAC	mir-8903	Canis familiar	Mature 5'	4.611605302	1.32E-05
TCTTTGGTTATCTAGCTGTATGA	mir-9-3//mir-9	Homo sapien	Mature 5'	43.56584446	2.184E-73
TGACCTGGGACTCGGACAGCTG	mir-3661	Homo sapien	Mature 5'	5.988927144	9.346E-11
TGAGAACTGAATTCCATAGGCT	mir-146b	Canis familiar	Mature 5'	11.92417556	1.061E-27
TGAGGGGCAGAGAGCGAGACTTT	mir-423//mir-4	Homo sapien	Mature 5'	23.57444261	1.744E-77
TGAGGTAGGAGGTTGTATAGTT	let-7e	Homo sapien	Mature 5'	2.343746346	1.435E-06
TGAGTACCGCCATGTCTGTTGGG	mir-1911	Homo sapien	Mature 5'	620.0693337	4.365E-74
TGAGTGTGTGTGTGAGTGTGT	mir-574	Homo sapien	Mature 5'	22.5971674	1.724E-75
TGCCTACTGAGCTGAAACACAG	mir-24-2	Homo sapien	Mature 5'	2.71423467	1.145E-07
TGCGGGGCTAGGGCTAACAGCA	mir-744	Homo sapien	Mature 5'	7.733417792	7.005E-29
TGGAAGACTAGTGATTTTGTTGT	mir-7-1//mir-7	Canis familiar	Mature 5'	7.774146797	3.631E-17
TGGAAGACTAGTGATTTTGTTGTT	mir-7-1//mir-7	Homo sapien	Mature 5'	11.84697007	2.353E-26
TGGAGAGAAAGGCAGTTCCTGA	mir-185	Homo sapien	Mature 5'	7.054814896	1.515E-21
TGGATCGGAGCCGGGGTCCGGA	mir-8859a	Canis familiar	Mature 3'	3.855506503	2.428E-11
TGGCAGTGTATTGTTAGCTGGT	mir-449a	Canis familiar	Mature 5'	14.54218254	1.195E-15
TGGCTCAGTTCAGCAGGAACAG	mir-24-1//mir-	Homo sapien	Mature 3'	2.971326252	5.869E-10
TGGCTCTGCGAGGTCAGCTCA	mir-1842	Canis familiar	Mature 5'	9.269012342	3.474E-26
TGTAAACATCCCCGACTGGAAGC	mir-30d	Canis familiar	Mature 5'	3.043703014	1.02E-10
TGTGACAGATTGATAACTGAAA	mir-542	Homo sapien	Mature 3'	19.98847665	8.778E-30
TGTTGTACTTTTTTTTTTGTTC	mir-3613	Homo sapien	Mature 5'	2.656868793	1.111E-06
TTAATGCTAATCGTGATAGGGGT	mir-155	Canis familiar	Mature 5'	2.324718712	7.467E-06
TTAATGCTAATCGTGATAGGGGT	mir-155	Homo sapien	Mature 5'	12.36939741	1.349E-42
TTACAGTTGTTCAACCAGTTACT	mir-582	Homo sapien	Mature 5'	3.33554835	1.205E-07
TTCACAAAGCCCATACACTTTT	mir-350	Canis familiar	Mature 3'	6.080011015	1.772E-17
TTCACCACCTTCTCCACCCAGC	mir-197	Homo sapien	Mature 3'	6.110497763	7.044E-25
TTCATTCGGCTGTCCAGATGTA	mir-1298	Homo sapien	Mature 5'	416.0031492	9.376E-80
TTCCTATGCATATACTTCTTTG	mir-202	Canis familiar	Mature 5'	27.47508281	5.35E-08
TTGCATATGTAGGATGTCCCAT	mir-448	Canis familiar	Mature 3'	51.76927389	4.249E-16
TTGGAGGCGTGGGTTTT	mir-4443	Homo sapien	Mature 5'	7.367071859	9.015E-10
TTGGCCTCTGTTCCATGCCTGGG	mir-8829	Canis familiar	Mature 5'	29.95549599	1.167E-35
TTGTGTCAATATGCGATGATGT	mir-592	Homo sapien	Mature 5'	876.2638847	5.522E-52
TTGTTCTTTGGTCTTTCAGCCA	mir-4677	Homo sapien	Mature 5'	10.40418625	5.452E-05
TTTGATGGATTTGCTTAGCACC	mir-8884	Canis familiar	Mature 3'	23.33684772	4.943E-46
TTTTGCAATATGTTCCTGAAT	mir-450b	Canis familiar	Mature 5'	7.856950845	1.514E-20
TTTTGCAATATGTTCCTGAATA	mir-450b	Homo sapien	Mature 5'	12.81784789	2.221E-21
TTTTGCGATGTGTTCCTAATAT	mir-450a-1//m	Homo sapien	Mature 5'	7.794944242	1.228E-19
TTTTTCATTATTGCTCCTGACC	mir-335	Homo sapien	Mature 3'	19.32226715	2.979E-38
TTTTTGCGATGTGTTCCTAATA	mir-450a	Canis familiar	Mature 5'	2.479450062	0.000138

Ch.1 : Differentially expressed down-regulated miRNAs between Control and LMEC hypoxic cell lines.

Sequence	miR	Species	Strand	Fold Change	FDR
AAAAGTGCTTACAGTGCAGGTAG	mir-106a	Homo sapiens	Mature 5'	-18.7778	1.81333E-13
AAAATGGTGCCCTAGTGACTACA	mir-224	Homo sapiens	Mature 3'	-415.366	2.05435E-20
AAACAAACATGGTGCACTTCTT	mir-495	Homo sapiens//Canis	Mature 3'	-18.0895	1.08872E-08
AAACATTCGCGGTGCACTTCTT	mir-543	Homo sapiens//Canis	Mature 3'	-257.003	2.5354E-12
AAACCGTTACCATTACTGAGTT	mir-451	Canis familiaris	Mature 5'	-16277.3	1.36E-130
AAAGCTGGGTTGAGAAGG	mir-320e	Homo sapiens	Mature 3'	-10.902	3.05245E-07
AACAATATCCTGGTGCTGAGTG	mir-338	Homo sapiens	Mature 5'	-2570.92	1.12703E-47
AACACACCTATTCAAGGATTCA	mir-362	Homo sapiens	Mature 3'	-3.03547	0.000152488
AACACACCTGGTTAACCTCTTT	mir-329b	Canis familiaris	Mature 3'	-243.194	2.29854E-15
AACACTGTCTGGTAAAGATGG	mir-141	Canis familiaris	Mature 3'	-3063.16	3.1578E-108
AACATAGAGGAAATTCCACGT	mir-376c	Homo sapiens	Mature 3'	-190.804	4.04149E-39
AACATTCAACGCTGTCGGTGAG	mir-181a-1//mir-181a	Canis familiaris	Mature 5'	-5.33759	0
AACATTCAACGCTGTCGGTGAGT	mir-181a-2//mir-181a	Homo sapiens	Mature 5'	-3.36325	1.43393E-11
AACCCGTAGATCCGAACTTGTG	mir-100	Homo sapiens	Mature 5'	-12.259	8.91391E-08
AACCCGTAGATCCGATCTTGT	mir-99a-1//mir-99a-2	Canis familiaris	Mature 5'	-41.7827	0
AACCCGTAGATCCGATCTTGTG	mir-99a	Homo sapiens	Mature 5'	-2.38703	7.57329E-07
AACTGGCCTACAAAGTCCCAGT	mir-193a	Homo sapiens	Mature 3'	-3.48189	1.08322E-10
AACTGTTTGCAGAGGAAACTGA	mir-452	Canis familiaris	Mature 5'	-66161.6	1.4279E-124
AATAATACATGGTTGATCTTT	mir-369	Homo sapiens	Mature 3'	-105.665	1.14319E-20
AATAGCTCAGAATGTCAGTTCTG	mir-7705	Homo sapiens	Mature 5'	-2.83553	0.034069082
AATATAACACAGATGGCCTGT	mir-410	Homo sapiens//Canis	Mature 3'	-80.481	1.48684E-31
AATATTATACAGTCAACCTCT	mir-656	Homo sapiens	Mature 3'	-3149.74	5.43477E-31
AATCACTAACCACACGGCCAGG	mir-34c	Homo sapiens	Mature 3'	-116.923	3.78068E-06
AATCATACAGGGACATCCAGT	mir-487a	Canis familiaris	Mature 3'	-217.092	5.35222E-13
AATCATACAGGGACATCCAGTT	mir-487a	Homo sapiens	Mature 3'	-840.061	5.20645E-24
AATCATTCACGGACAACACTT	mir-382	Homo sapiens	Mature 3'	-139.786	6.28678E-11
AATCATTCACGGACAACACTTT	mir-382	Canis familiaris	Mature 3'	-171.951	9.01542E-10
AATCCTTGGAACCTAGGTGTGAC	mir-362	Canis familiaris	Mature 5'	-2.15968	0.000202962
AATCGTACAGGGTCATCCACTT	mir-487b	Homo sapiens//Canis	Mature 3'	-115.598	8.55085E-25
AATGCACCTGGGCAAGGATTCA	mir-502	Homo sapiens//Canis	Mature 3'	-4.20121	2.84081E-14
AATGGCGCCACTAGGGTTGTGC	mir-652	Canis familiaris	Mature 3'	-2.76726	1.17218E-06
AATTGCACGGTATCCATCTGTA	mir-363	Homo sapiens	Mature 3'	-3944.13	4.8921E-52
AATTGCACGGTATCCATCTGTAA	mir-363	Canis familiaris	Mature 3'	-14169.4	1.31805E-80
ACAGATTCGATTCTAGGGGAAT	mir-10b	Homo sapiens	Mature 3'	-2.5371	1.28011E-05
ACAGCAGGCACAGACAGGCAGT	mir-214	Canis familiaris	Mature 3'	-21378.4	1.35207E-82
ACCACAGGGTAGAACCACGGA	mir-140	Canis familiaris	Mature 3'	-8.18112	0
ACCATCGACCGTTGATTGTACC	mir-181a-1	Homo sapiens	Mature 3'	-26.4825	4.4775E-32
ACCCGTCCCGTTCGTCCCCGGA	mir-1247	Homo sapiens	Mature 5'	-3256.15	4.63061E-45
ACGGATGTTTGAGCATGTGCTA	mir-105-1//mir-105-2	Homo sapiens	Mature 3'	-104.221	5.3944E-09
ACTCAAAAAATGGCGGCACTTT	mir-371	Canis familiaris	Mature 5'	-214.131	3.97054E-27
ACTCCATTTGTTTTGATGATGGA	mir-136	Homo sapiens//Canis	Mature 5'	-11336.7	5.41403E-88
ACTGCATTATGAGCACTTAAAG	mir-20a	Homo sapiens	Mature 3'	-2.12889	0.03200997
ACTGGACTAGGAGTCAGAAGG	mir-378i	Homo sapiens	Mature 5'	-4.07635	4.04671E-12
ACTGGACTTAGGGTCAGAAGGC	mir-422a	Homo sapiens	Mature 5'	-3.27287	5.25766E-07
ACTGGACTTGGAGTCAGAAGAG	mir-378c	Homo sapiens	Mature 5'	-8.04778	8.37224E-14
ACTGGACTTGGTGTCAGATGG	mir-378h	Homo sapiens	Mature 5'	-5.17948	4.96966E-09
ACTGGGCTTGGAGTCAGAAG	mir-378g	Homo sapiens	Mature 5'	-2.02558	0.010248522
AGAGGATACCCTTTGTATGTT	mir-1185-2//mir-1185	Homo sapiens	Mature 5'	-374.025	1.15269E-15
AGAGGCTGGCCGTGATGAATTC	mir-485	Homo sapiens	Mature 5'	-616.43	3.26541E-23
AGAGGCTGGCCGTGATGAATTC	mir-485	Canis familiaris	Mature 5'	-143.595	2.13489E-19
AGAGGTTGCCCTTGGTGAATTC	mir-377	Canis familiaris	Mature 5'	-84.1128	6.01687E-07
AGATCAGAAGGTGATTGTGGCT	mir-383	Homo sapiens//Canis	Mature 5'	-21.5667	3.1934E-13
AGATCGACCGTGTTATATTCGC	mir-369	Homo sapiens	Mature 5'	-281.054	7.28301E-29
AGCGAGGTTGCCCTTTGTATAT	mir-381	Homo sapiens	Mature 5'	-126.555	1.84125E-08
AGGCAAGATGCTGGCATAGCT	mir-31	Homo sapiens	Mature 5'	-51526.8	2.31281E-87
AGGCAAGATGCTGGCATAGCTG	mir-31	Canis familiaris	Mature 5'	-8493.11	1.66684E-55
AGGCAGTGTAATTAGCTGATTG	mir-34b	Canis familiaris	Mature 5'	-140.357	1.44613E-07
AGGCAGTGTAGTTAGCTGATTGC	mir-34c	Homo sapiens//Canis	Mature 5'	-27.7119	5.06385E-13
AGGTTACCCGAGCAACTTTGCAT	mir-409	Homo sapiens	Mature 5'	-2640.7	1.51887E-39
AGTCAACCATCCAGCTGTTTGA	mir-2483	Canis familiaris	Mature 5'	-518.073	3.01273E-24
AGTGGTTCTTAACAGTTCAACAG	mir-203a	Homo sapiens	Mature 5'	-646.415	6.69178E-22
ATAAGACGAACAAAAGGTTTGT	mir-208b	Canis familiaris	Mature 3'	-14.5527	5.41806E-09
ATAATACATGGTTAACCTCTTT	mir-655	Homo sapiens	Mature 3'	-133.327	9.22664E-08
ATAGTAGACCGTATAGCGTACG	mir-411	Canis familiaris	Mature 5'	-452.408	1.9753E-106
ATATACAGGGGGAGACTCTTAT	mir-1185	Canis familiaris	Mature 3'	-337.898	1.38731E-13
ATCACACAAAGGCAACTTTTGT	mir-377	Homo sapiens	Mature 3'	-29.2733	1.56492E-09
ATCACATTGCCAGTGATTACCC	mir-23c	Homo sapiens	Mature 3'	-2.19174	0.026241142
ATCATACAAGGACAATTTCTTT	mir-539	Homo sapiens	Mature 3'	-104.307	3.16766E-07
ATCATAGAGGAAAATCCACGT	mir-376a-1//mir-376a	Homo sapiens//Canis	Mature 3'	-1734.8	9.11808E-33
ATCATAGAGGAAAATCCATGTT	mir-376b	Canis familiaris	Mature 3'	-497.338	2.50697E-21
ATCATGATGGGCTCCTCGGTGT	mir-433	Homo sapiens//Canis	Mature 3'	-251.971	1.58749E-16
ATCATGTATGATACTGCAAACA	mir-6516	Homo sapiens	Mature 3'	-6.70759	6.63039E-09
ATGCACCTGGGCAAGGATTCT	mir-500	Canis familiaris	Mature 3'	-22.925	1.50433E-43
ATGGAGAAGGCTTCTGA	mir-4531	Homo sapiens	Mature 3'	-15.318	5.40538E-09
ATGTATTCGTACTGTCTGATG	mir-10395	Homo sapiens	Mature 3'	-2.37188	0.012541497
CAAAGTGCTCACAGTGCAGGTA	mir-20b	Canis familiaris	Mature 5'	-39.8152	3.02233E-09
CAAATTCGTATCTAGGGGAATA	mir-10a	Homo sapiens	Mature 3'	-3.35691	9.14942E-05
CAACCTGGAGGACTCCATGCTG	mir-490	Canis familiaris	Mature 3'	-73.8102	1.63138E-06
CAAGCTCGCTTCTATGGGTCTG	mir-99a	Homo sapiens	Mature 3'	-9128.89	1.27596E-81
CAAGTCACTAGTGGTTCCGTTT	mir-224	Canis familiaris	Mature 5'	-40728.8	7.463E-175
CAATGTTTCCACAGTGCATCAC	mir-33a	Homo sapiens	Mature 3'	-2.23027	0.01298385
CACATTACACGGTCGACCTCT	mir-323a//mir-323	Homo sapiens//Canis	Mature 3'	-19.7518	5.9016E-11
CAGATATTGCACGGTTGATCTCT	mir-3958	Canis familiaris	Mature 3'	-56.8288	1.77337E-20
CAGCAGCACACTGTGGTTTGT	mir-497	Canis familiaris	Mature 5'	-7.34389	0
CAGGTCGTCTTGCAGGGCTTCT	mir-431	Homo sapiens	Mature 3'	-113.289	7.62359E-07
CAGTGGTTTTACCCTATGGTAG	mir-140	Homo sapiens	Mature 5'	-4.83019	7.79558E-14
CAGTTATCACAGTGCTGATGCT	mir-101-1	Homo sapiens	Mature 5'	-8.81168	8.59774E-18
CATAAAGTAGAAAGCACTACT	mir-142	Homo sapiens	Mature 5'	-23.3559	0
CATCATCGTCTCAAATGAGTCT	mir-136	Homo sapiens	Mature 3'	-26657	7.23594E-79
CATCTTACCGGACAGTGCTGGA	mir-200a	Canis familiaris	Mature 5'	-6671.29	1.19759E-75
CATCTTACTGGGCAGCATTGGA	mir-200b	Canis familiaris	Mature 5'	-7506.39	1.79147E-74
CATCTTCCAGTACAGTGTTGGA	mir-141	Homo sapiens	Mature 5'	-2232.61	7.6124E-89
CATTATTACTTTTGGTACGCG	mir-126	Homo sapiens//Canis	Mature 5'	-13228	5.652E-251
CCAATATTGGCTGTGCTGCTCC	mir-195	Homo sapiens	Mature 3'	-2.95247	0.001972168
CCACCAGCTGGCGTTCCCTGG	mir-1838	Canis familiaris	Mature 5'	-2.89864	8.7631E-07
CCCAATACACGGTCGACCTCTT	mir-323b	Homo sapiens	Mature 3'	-87.8604	2.1918E-22
CCCAGTGTTCAGACTACCTGTTC	mir-199a-1//mir-199a	Homo sapiens	Mature 5'	-3.41762	3.01042E-09
CCCAGTGTTTAGACTATCTGTTC	mir-199b	Homo sapiens	Mature 5'	-5325.61	1.5995E-196

CCCATAAAGTAGAAAGCACTA	mir-142	Canis familiaris	Mature 5'	-34.0014	6.53663E-90
CCCTGAGACCCTAACCTTAA	mir-4324	Homo sapiens	Mature 3'	-98.3118	1.45299E-07
CCTATTCTTGATTACTTGTTTC	mir-26a-2	Homo sapiens	Mature 3'	-4.30957	7.32731E-10
CCTCTGGGCCCTTCCTCCAG	mir-326	Canis familiaris	Mature 3'	-2341.24	3.4391E-48
CCTGAACTAGGGGTCTGGAGG	mir-345	Canis familiaris	Mature 3'	-2.89208	1.17172E-06
CCTGTTCTCCATTACTTGGCT	mir-26b	Homo sapiens	Mature 3'	-3.25093	4.7884E-08
CGTCCCGGGGCTGCGCGAGGCA	mir-4449	Homo sapiens	Mature 3'	-150.396	1.3584E-07
CGTCTTACCCAGCAGTGTTTGG	mir-200c	Homo sapiens	Mature 5'	-54.7932	6.6284E-19
CGTGTATTTGACAAGCTGAGTT	mir-223	Homo sapiens	Mature 5'	-32.6662	3.17771E-08
CTATACAACCTACTGCCTTCCC	let-7b	Homo sapiens	Mature 3'	-5.77112	1.68189E-17
CTATACAATCTACTGTCTTTC	let-7a-1//let-7a-3	Homo sapiens	Mature 3'	-2.82318	2.35573E-07
CTATACAGTCTACTGTCTTTCC	let-7f-2	Homo sapiens	Mature 3'	-2.05195	0.000664705
CTCCGTTTGCCTGTTTTGCTGAT	mir-1468	Canis familiaris	Mature 5'	-4019.6	2.17044E-55
CTCCTGGGGCCCGCACTCTCGC	mir-1343	Homo sapiens	Mature 3'	-2.25404	8.11315E-05
CTGAAGCTCAGAGGGCTCTGAT	mir-127	Homo sapiens	Mature 5'	-2034.13	2.47806E-26
CTGGCCCTCTCTGCCCTTCCGT	mir-328	Canis familiaris	Mature 3'	-3.30338	1.50249E-05
CTGGGAGAAGGCTGTTTACTCT	mir-30c-2	Homo sapiens	Mature 3'	-7.27451	2.8296E-18
CTGGGAGAGGGTTGTTTACTCC	mir-30c-1	Homo sapiens	Mature 3'	-2.5992	2.03005E-05
CTGTACAACCTTCTAGCTTTCC	let-7c	Homo sapiens	Mature 3'	-400.647	1.48535E-19
CTTGGCACCTAGCAAGCACTCA	mir-1271	Homo sapiens	Mature 5'	-17.3263	0.000152488
CTTGGCACCTAGTAAGCACT	mir-1271	Canis familiaris	Mature 5'	-9.6673	0
CTTTCAGTCGGATGTTTACAGC	mir-30e	Homo sapiens//Canis	Mature 3'	-3.30461	1.08322E-10
CTTTCAGTCGGATGTTTGCAGC	mir-30a	Homo sapiens	Mature 3'	-3.7046	1.24509E-11
GAAGTTGTTCGTGGTGGATTCG	mir-382	Homo sapiens	Mature 5'	-64.2801	3.30716E-18
GAATGTTGCTCGGTGAACCCCT	mir-409	Homo sapiens	Mature 3'	-390.034	3.57745E-30
GATTTCAGTGGAGTGAAGTTC	mir-205	Homo sapiens	Mature 3'	-1297.69	2.17764E-33
GCAGTCCATGGGCATATACAC	mir-455	Homo sapiens	Mature 3'	-7629.62	3.20385E-80
GCCCAAAGGTGAATTTTTTGGG	mir-186	Homo sapiens	Mature 3'	-14.2289	6.01754E-11
GCCCCTGGGCCTATCCTAGAA	mir-331	Canis familiaris	Mature 3'	-2.4342	2.05955E-06
GCCTGCTGGGGTGGAACCTGGT	mir-370	Canis familiaris	Mature 3'	-1195.21	1.10361E-18
GCGACCCACTCTTGGTTTCCA	mir-551a	Homo sapiens//Canis	Mature 3'	-880.638	1.23149E-27
GCTGGGAAGGCAAAGGGACGT	mir-204	Homo sapiens	Mature 3'	-59.6206	1.84313E-05
GGATATCATCATATACTGTAAG	mir-144	Homo sapiens	Mature 5'	-12331.2	1.0188E-53
GGATCCGAGTCACGGCACCA	mir-4454	Homo sapiens	Mature 5'	-2.89088	1.42737E-05
GGATTCCTGGAAATACTGTTCT	mir-145	Homo sapiens	Mature 3'	-115107	1.9154E-168
GGTGCAGTGCTGCATCTCTGGT	mir-143	Homo sapiens	Mature 5'	-5746.78	4.44966E-65
GTAGATTCTCCTTCTATGAGTA	mir-376a-1	Homo sapiens	Mature 5'	-245.358	1.69193E-30
GTCATACACGGCTCTCCTCTCT	mir-485	Homo sapiens	Mature 3'	-302.74	1.00217E-13
GTCCAGTTTTCCCAGGAATCCCT	mir-145	Canis familiaris	Mature 5'	-13590.4	5.4883E-155
GTGAAATGTTTAGGACCACTAG	mir-203a//mir-203	Homo sapiens//Canis	Mature 3'	-3107.87	1.3745E-237
GTGACATCACATATACGGCGGC	mir-489	Canis familiaris	Mature 3'	-78.2427	1.33264E-06
GTGCATTGTAGTTGCATTGCA	mir-33a	Homo sapiens	Mature 5'	-2.18674	0.005279093
GTGGTTATCCCTGCTGTGTTCG	mir-487a	Homo sapiens	Mature 5'	-138.542	1.20763E-07
GTGTGCGGAAATGCTTCTGCT	mir-147b	Homo sapiens	Mature 3'	-294.357	2.03672E-39
GTGTGCGGAAATGCTTCTGCTA	mir-147	Canis familiaris	Mature 3'	-7209.82	8.7309E-54
TAAAGTGCTTATAGTGCAGGTAC	mir-20a	Homo sapiens//Canis	Mature 5'	-2.03968	0.000100062
TAACACTGTCTGGTAAAGATGG	mir-141	Homo sapiens	Mature 3'	-1632.31	1.6144E-181
TAACACTGTCTGGTAACGATGT	mir-200a	Homo sapiens	Mature 3'	-101882	3.0326E-148
TAAGGCACGCGGTGAATGCCA	mir-124-3//mir-124-1	Canis familiaris	Mature 3'	-63.1269	7.74543E-06
TAATACTGCCGGGTAATGATGGA	mir-200c	Homo sapiens//Canis	Mature 3'	-8216.84	5.5786E-168
TAATACTGCCTGGTAATGATGA	mir-200b	Homo sapiens	Mature 3'	-41181.4	2.1018E-231
TAATACTGTCTGGTAATGCCGT	mir-429	Canis familiaris	Mature 3'	-7113.25	4.3785E-128
TACAGTACTGTGATAACTGA	mir-101-2//mir-101-1	Canis familiaris	Mature 3'	-7.04513	0
TACAGTACTGTGATAACTGAA	mir-101-1//mir-101-2	Homo sapiens	Mature 3'	-4.9383	0
TACAGTATAGATGATGTACT	mir-144	Homo sapiens	Mature 3'	-5479.81	3.56281E-74
TACCACAGGGTAGAACCACGG	mir-140	Homo sapiens	Mature 3'	-2.0966	2.52514E-05
TACCCTGTAGAACCGAATTTGTC	mir-10b	Homo sapiens	Mature 5'	-3.25931	0
TACCCTGTAGATCCGAATTTGT	mir-10a	Canis familiaris	Mature 5'	-4.64857	1.33814E-11
TACGTAGATATATATGTATTTT	mir-1277	Homo sapiens	Mature 3'	-2.73245	0.039858061
TAGCACCATTTGAAATCGGTTA	mir-29c//mir-29c-1//m	Homo sapiens//Canis	Mature 3'	-8.97322	0
TAGCAGCACAGAAATATTGGC	mir-195	Homo sapiens	Mature 5'	-7.64964	0
TAGCAGCACAGAAATATTGGCA	mir-195	Canis familiaris	Mature 5'	-8.1797	0
TAGGCCATGGTAGATAGAGATG	mir-1836	Canis familiaris	Mature 5'	-81.1928	1.52445E-06
TAGTAGACCGTATAGCGTACG	mir-411	Homo sapiens	Mature 5'	-260.481	7.67967E-89
TATACAAGGGCAAGCTCTCTGT	mir-381	Canis familiaris	Mature 3'	-295.658	5.5974E-99
TATGGCTTTTTATTCCTATGTGA	mir-135a-2//mir-135a-	Canis familiaris	Mature 5'	-2.91835	0.018612562
TATGTAACACGGTCCACTAACC	mir-411	Homo sapiens	Mature 3'	-232.818	1.37692E-28
TATGTAACATGGTCCACTAACT	mir-379	Homo sapiens	Mature 3'	-2170.9	4.77556E-32
TATGTAATATGGTCCACGTCT	mir-380	Canis familiaris	Mature 3'	-68.0476	9.16574E-28
TATGTCTGCTGACCATCACCTT	mir-654	Homo sapiens	Mature 3'	-50.4585	1.86847E-16
TATGTGCCTTTGGACTACATCG	mir-455	Homo sapiens//Canis	Mature 5'	-8397.54	1.51336E-82
TATTGCACATTACTAAGTTGCA	mir-32	Homo sapiens	Mature 5'	-3.89935	4.73926E-09
TATTGCACATTACTAAGTTGCAT	mir-32	Canis familiaris	Mature 5'	-3.97382	7.20357E-09
TCAAATGCTCAGACTCCTGT	mir-105a	Canis familiaris	Mature 5'	-114.484	4.66526E-08
TCAAATGCTCAGACTCCTGTGGT	mir-105-1//mir-105-2	Homo sapiens	Mature 5'	-499.459	4.55711E-22
TCAAGTCACTAGTGGTTCCGTTT	mir-224	Homo sapiens	Mature 5'	-10675.3	6.19826E-81
TCACAAGTCAGGCTCTTGGGAC	mir-125b-2	Homo sapiens	Mature 3'	-70.0031	7.95566E-90
TCACTCCTCCCCTCCCGTCTT	mir-483	Canis familiaris	Mature 3'	-16.1179	2.97812E-06
TCAGTGCATGACAGAACTTGG	mir-152	Homo sapiens//Canis	Mature 3'	-2.98342	1.42927E-08
TCCAGCATCAGTGATTTTGTTG	mir-338	Homo sapiens	Mature 3'	-3441.87	3.34826E-86
TCCAGCATCAGTGATTTTGTTGA	mir-338	Canis familiaris	Mature 3'	-12534.9	2.4212E-99
TCCATTACACTACCCTGCCTCT	mir-885	Canis familiaris	Mature 5'	-35.7249	2.44921E-17
TCCCTGAGACCCTAACTTGTGA	mir-125b-1//mir-125b	Homo sapiens//Canis	Mature 5'	-17.5281	0
TCCCTGAGACCCTTTAACCTGT	mir-125a	Canis familiaris	Mature 5'	-10.736	0
TCCTGTACTGAGCTGCCCCGA	mir-486	Canis familiaris	Mature 5'	-5.11136	4.57549E-12
TCCTGTACTGAGCTGCCCCGAG	mir-486-1//mir-486-2	Homo sapiens	Mature 5'	-2.03214	0.004902142
TCCTTCATTCCACCGGAGTCTG	mir-205	Canis familiaris	Mature 5'	-18644.6	2.453E-223
TCGGATCCGTCTGAGCTTGGCT	mir-127	Homo sapiens//Canis	Mature 3'	-9094.11	1.33111E-97
TCGTACCGTGAGTAATAATGCG	mir-126	Homo sapiens	Mature 3'	-33595.8	4.4359E-239
TCTACAGTGCACGTGTCTCCAGT	mir-139	Homo sapiens	Mature 5'	-7.31581	4.44332E-19
TCTCCCAACCCTTGTACCAGTG	mir-150	Canis familiaris	Mature 5'	-942.303	1.1677E-102
TCTTGGAGTAGGTCATTGGGTGG	mir-432	Canis familiaris	Mature 5'	-6394.47	1.18976E-41
TGAAACATACACGGGAAACCTC	mir-494	Canis familiaris	Mature 3'	-367.237	3.37089E-20
TGAAGGTCTACTGTGTGCCAG	mir-493	Canis familiaris	Mature 3'	-313.073	2.51298E-14
TGAAGGTCTACTGTGTGCCAGG	mir-493	Homo sapiens	Mature 3'	-232.061	1.08322E-10
TGACCGATTTCTCCTGGTGTTC	mir-29c	Homo sapiens	Mature 5'	-4.8616	1.78478E-09
TGAGAACTGAATTCCATGGGTT	mir-146a	Homo sapiens//Canis	Mature 5'	-32.6139	1.15223E-84
TGAGATGAAGCACTGTAGCTC	mir-143	Homo sapiens//Canis	Mature 3'	-16357.7	0
TGAGGTAGTAGGTTGTATAGTT	let-7a-1//let-7a-3//let-	Homo sapiens//Canis	Mature 5'	-4.23832	0
TGAGGTAGTAGGTTGTATGGTT	let-7c	Homo sapiens//Canis	Mature 5'	-456.298	4.1531E-155

TGAGGTAGTAGGTTGTGTGGTT	let-7b	Canis familiaris	Mature 5'	-9.91588	0
TGATATGTTTGATATTGGGTT	mir-190b	Canis familiaris	Mature 5'	-2.47324	0.004316121
TGCACCCTGAGAGCTGGAGCAG	mir-1835	Canis familiaris	Mature 5'	-89.6387	1.20763E-07
TGCCTGTCTACACTTGCTGTGC	mir-214	Homo sapiens	Mature 5'	-4837.73	2.42536E-65
TGCTATGCCAACATATTGCCAT	mir-31	Homo sapiens	Mature 3'	-468.137	2.14684E-18
TGGAATGTAAAGAAGTATGTA	mir-1-1//mir-1-2	Canis familiaris	Mature 3'	-1595	1.57457E-10
TGGAATGTAAAGAAGTATGTAT	mir-1-2//mir-1-1	Homo sapiens	Mature 3'	-6164.16	1.89225E-15
TGGACGGAGAACTGATAAGGGT	mir-184	Canis familiaris	Mature 3'	-336.288	7.56358E-20
TGGGTTCCTGGCATGCTGATTT	mir-23b	Homo sapiens	Mature 5'	-4.25053	0.000121387
TGGTAGACTATGGAACGTAGG	mir-379	Homo sapiens//Canis	Mature 5'	-11360	7.79238E-61
TGGTCGACCAGTTGGAAAGTAA	mir-412	Homo sapiens	Mature 5'	-343.644	2.84119E-14
TGGTTTACCGTCCCACATACAT	mir-299	Canis familiaris	Mature 5'	-90.6613	2.25497E-22
TGTAAACATCCCCGACTGGAAG	mir-30d	Homo sapiens	Mature 5'	-2.13282	3.64241E-05
TGTAAACATCCTACACTCTCAGC	mir-30c-2//mir-30c-1	Homo sapiens	Mature 5'	-13.0153	0
TGTAAACATCCTACACTCTCAGC	mir-30c-2//mir-30c-1	Canis familiaris	Mature 5'	-3.90996	6.78752E-15
TGTAAACATCCTCGACTGGAAG	mir-30a	Homo sapiens	Mature 5'	-24.2807	0
TGTAAACATCCTTGACTGGAAG	mir-30c	Homo sapiens	Mature 5'	-2.27685	2.0552E-06
TGTAGTGTTTCCTACTTTATGGA	mir-142	Homo sapiens	Mature 3'	-37.4992	2.45138E-63
TGTCAGTTTGTCAAATACCCC	mir-223	Canis familiaris	Mature 3'	-21.8642	3.3981E-27
TGTCAGTTTGTCAAATACCCCA	mir-223	Homo sapiens	Mature 3'	-16.0428	6.65696E-17
TGTGACTGGTTGACCAGAGGGG	mir-134	Canis familiaris	Mature 5'	-106.61	4.52003E-22
TGTGCAAATCCATGCAAAACTG	mir-19b-1//mir-19b-2	Canis familiaris	Mature 3'	-2.88297	4.19226E-09
TTAATATCGGACAACCATTGT	mir-889	Homo sapiens	Mature 3'	-158.48	2.41244E-39
TTAATATCGGACAACCATTGTT	mir-889	Canis familiaris	Mature 3'	-299.404	6.98722E-23
TTATAATACAACCTGATAAGT	mir-374a	Canis familiaris	Mature 5'	-2.60622	1.66244E-06
TTCAACGGGTATTTATTGAGCA	mir-95	Canis familiaris	Mature 3'	-2857.65	3.81331E-67
TTCAAGTAATCCAGGATAGGCT	mir-26a-1//mir-26a-2	Homo sapiens//Canis	Mature 5'	-5.32886	0
TTCAAGTAATTCAGGATAGGT	mir-26b	Homo sapiens	Mature 5'	-9.65516	0
TTCAAGTAATTCAGGATAGGTT	mir-26b	Canis familiaris	Mature 5'	-3.5124	4.65894E-12
TTCCCTTTGTCATCCTATGCCT	mir-204	Homo sapiens//Canis	Mature 5'	-87.0548	3.7211E-110
TTCCCTTTGTCATCCTTTGCCT	mir-211	Canis familiaris	Mature 5'	-13026.9	6.03114E-13
TTGCAGCTGCCTGGGAGTGACTT	mir-1301	Homo sapiens	Mature 3'	-2.28616	0.00016909
TTGCAGCTGCCTGGGAGTGACTT	mir-1301	Canis familiaris	Mature 3'	-7.40079	5.38005E-17
TTGCATAGTCACAAAAGTGA	mir-153	Canis familiaris	Mature 3'	-5.51163	4.06494E-05
TTGGTCCCCTTCAACCAGCTG	mir-133c	Canis familiaris	Mature 3'	-60144.6	1.24041E-17
TTGGTCCCCTTCAACCAGCTGT	mir-133a	Canis familiaris	Mature 3'	-129552	8.07223E-20
TTGTACATGGTAGGCTTTCATT	mir-493	Homo sapiens	Mature 5'	-1265.58	3.51333E-25
TTGTGCTTGATCTAACCATGT	mir-218-1//mir-218-2	Canis familiaris	Mature 5'	-10.4549	3.47382E-26
TTTGCAGTAACAGGTGTGAACAT	mir-6516	Canis familiaris	Mature 5'	-2.5254	0.003705223
TTTGGCACTAGCACATTTTTGCT	mir-96	Canis familiaris	Mature 5'	-3.69723	3.15518E-11
TTTGGTCCCCTTCAACCAGCTG	mir-133a-1//mir-133a-2	Homo sapiens	Mature 3'	-10218.9	2.52075E-13
TTTGTGACCTGGTCCACTAACC	mir-758	Canis familiaris	Mature 3'	-120.866	6.51327E-19
TTTGTTCGTTCGGCTCGCGTGA	mir-375	Canis familiaris	Mature 3'	-2.68915	1.80148E-06
TTTTTTGCTGGAACATTTCTGG	mir-9983	Homo sapiens	Mature 3'	-117.796	1.6182E-08

Ch.1 : Degree and betweenness centrality of KMEC related HRMs regulatory network.

miRNA/gene ID	Degree	Betweenness
hsa-mir-21-5p	27	572.3382
hsa-mir-424-5p	18	244.0554
hsa-mir-107	16	163.3488
hsa-mir-301a-3p	16	282.7059
hsa-mir-9-5p	10	97.52813
hsa-mir-542-3p	10	87.96854
hsa-mir-450b-5p	10	142.7072
hsa-mir-140-5p	9	115.148
hsa-mir-135b-5p	8	107.3888
hsa-mir-450a-5p	5	28.08951
hsa-mir-330-5p	5	24.10718
hsa-mir-135b-3p	5	50.61431
VEGFA	5	42.92563
FZD6	5	46.77518
FOXO1	4	40.77722
MDM4	4	20.70271
PIK3R1	4	17.16183
PURB	4	36.20902
ACTR2	4	56.86036
TNRC6B	4	22.57707
RPRD2	4	33.2884
DICER1	4	27.15036
TMEM245	4	34.97413
GPRC5A	4	21.02901
TBPL1	4	15.66196
TSC22D2	4	24.45071
PPP6R3	4	21.02901
CDK6	3	6.672943
CLU	3	23.90047
MBNL1	3	33.36152

Ch.1 : Degree and betweenness centrality of LMEC related HRMs regulatory network.

miRNA/gene ID	Degree	Betweenness
hsa-mir-301a-3p	25	253.1206
hsa-mir-196a-5p	22	185.2389
hsa-mir-212-3p	21	133.2616
hsa-mir-132-3p	21	126.5213
hsa-mir-196b-5p	16	68.40308
hsa-mir-146b-5p	4	7.454476
CDKN1A	4	16.38609
MAPK1	4	10.10158
BRWD1	4	14.88104
EIF2S3	3	4.77643
HOXA5	3	3.512028
KCNJ2	3	5.985023
MYC	3	5.985023
NAP1L1	3	5.965764
POLR2D	3	3.512028
TGFBR2	3	3.512028
TRPC3	3	3.512028
MBD4	3	10.61279
TSPAN3	3	3.512028
NUP50	3	4.77643
TSPAN12	3	4.77643
SALL3	3	3.512028
C11orf57	3	3.512028
SLC10A7	3	4.77643
PPP1R15B	3	3.512028
PRUNE2	3	3.512028
SLC35E2B	3	3.512028
CCNA2	3	2.206611
ACSL4	3	2.206611
HSPA1B	3	6.588927

Ch.2 : Differentially expressed up-regulated ncRNAs (except miRNA) between KMeC normoxic and hypoxic cell lines.

Small RNA - Name	Small RNA - Resource	Fold change	Weighted difference	FDR p
ENSCAFT00000032559.3	Canis_familiaris.CanFam3.1.ncrna	2.826713	1.26E-05	0.036691
ENSCAFT00000032578.1	Canis_familiaris.CanFam3.1.ncrna	24.51049	0.000545	6.14E-06
ENSCAFT00000032705.1	Canis_familiaris.CanFam3.1.ncrna	14.59592	3.84E-06	6.93E-15
ENSCAFT00000032849.1	Canis_familiaris.CanFam3.1.ncrna	2.778198	0.00015	0.000874
ENSCAFT00000032978.1	Canis_familiaris.CanFam3.1.ncrna	2.491355	1.05E-05	0.01203
ENSCAFT00000033055.1	Canis_familiaris.CanFam3.1.ncrna	2.172389	0.000459	0.005794
ENSCAFT00000033230.1	Canis_familiaris.CanFam3.1.ncrna	3.529308	1.22E-06	0.001494
ENSCAFT00000033295.2	Canis_familiaris.CanFam3.1.ncrna	2.13262	1.43E-05	0.004494
ENSCAFT00000033518.2	Canis_familiaris.CanFam3.1.ncrna	5.41822	1.58E-06	5.58E-06
ENSCAFT00000033747.1	Canis_familiaris.CanFam3.1.ncrna	2.915763	0.000128	4.3E-05
ENSCAFT00000033993.1	Canis_familiaris.CanFam3.1.ncrna	3.709511	0.003816	1.77E-09
ENSCAFT00000034244.1	Canis_familiaris.CanFam3.1.ncrna	8.493723	0.010955	7.93E-22
ENSCAFT00000034287.1	Canis_familiaris.CanFam3.1.ncrna	2.688312	0.002301	7.39E-05
ENSCAFT00000034337.1	Canis_familiaris.CanFam3.1.ncrna	9.185116	3.39E-06	2.17E-05
ENSCAFT00000034591.1	Canis_familiaris.CanFam3.1.ncrna	8.808943	1.11E-05	8.68E-06
ENSCAFT00000034593.1	Canis_familiaris.CanFam3.1.ncrna	3.65727	4.71E-05	4.35E-05
ENSCAFT00000034675.1	Canis_familiaris.CanFam3.1.ncrna	2.544322	6.19E-06	0.001166
ENSCAFT00000034677.1	Canis_familiaris.CanFam3.1.ncrna	5.283851	0.011407	2.11E-11
ENSCAFT00000034682.1	Canis_familiaris.CanFam3.1.ncrna	3.065509	0.004568	8.6E-07
ENSCAFT00000034815.1	Canis_familiaris.CanFam3.1.ncrna	3.487326	0.000264	2.49E-07
ENSCAFT00000034822.1	Canis_familiaris.CanFam3.1.ncrna	2.294896	2.98E-05	0.000331
ENSCAFT00000034823.1	Canis_familiaris.CanFam3.1.ncrna	2.703568	0.000488	3.9E-05
ENSCAFT00000034825.1	Canis_familiaris.CanFam3.1.ncrna	4.421527	2.28E-05	0.0019
ENSCAFT00000034827.1	Canis_familiaris.CanFam3.1.ncrna	2.008923	5.94E-05	0.004123
ENSCAFT00000034832.1	Canis_familiaris.CanFam3.1.ncrna	2.650482	9.82E-05	7.04E-06
ENSCAFT00000034840.1	Canis_familiaris.CanFam3.1.ncrna	3.701608	7.01E-05	4.52E-05
ENSCAFT00000034844.1	Canis_familiaris.CanFam3.1.ncrna	2.767332	0.000866	8.34E-05
ENSCAFT00000034845.1	Canis_familiaris.CanFam3.1.ncrna	2.718359	0.000118	0.000871
ENSCAFT00000034851.1	Canis_familiaris.CanFam3.1.ncrna	5.405069	0.000163	1.25E-10
ENSCAFT00000034898.1	Canis_familiaris.CanFam3.1.ncrna	5.249025	1.07E-06	0.001487
ENSCAFT00000040081.1	Canis_familiaris.CanFam3.1.ncrna	2.747852	0.001084	8.66E-05
ENSCAFT00000040113.2	Canis_familiaris.CanFam3.1.ncrna	3.102503	0.002096	1.46E-06
ENSCAFT00000040140.1	Canis_familiaris.CanFam3.1.ncrna	2.267187	0.001604	0.001389
ENSCAFT00000040225.1	Canis_familiaris.CanFam3.1.ncrna	4.13939	4.32E-05	1.01E-05
ENSCAFT00000040259.1	Canis_familiaris.CanFam3.1.ncrna	3.511569	8.19E-05	1.15E-06
ENSCAFT00000040260.1	Canis_familiaris.CanFam3.1.ncrna	17.93051	1.67E-05	3.15E-10
ENSCAFT00000040267.1	Canis_familiaris.CanFam3.1.ncrna	2.962747	0.000669	4.09E-06
ENSCAFT00000040383.1	Canis_familiaris.CanFam3.1.ncrna	6.621347	6.89E-05	6.82E-07
ENSCAFT00000040426.1	Canis_familiaris.CanFam3.1.ncrna	3.985945	5.67E-05	2.67E-07
ENSCAFT00000040428.1	Canis_familiaris.CanFam3.1.ncrna	2.473644	5.9E-05	0.001229
ENSCAFT00000040530.1	Canis_familiaris.CanFam3.1.ncrna	3.097265	0.007987	0.000788
ENSCAFT00000040696.2	Canis_familiaris.CanFam3.1.ncrna	3.060422	8.26E-07	0.014344
ENSCAFT00000040741.1	Canis_familiaris.CanFam3.1.ncrna	2.314397	0.000163	0.000734
ENSCAFT00000040958.1	Canis_familiaris.CanFam3.1.ncrna	2.849767	7.69E-05	4.33E-05
ENSCAFT00000041174.2	Canis_familiaris.CanFam3.1.ncrna	4.076234	4.27E-05	1.4E-05
ENSCAFT00000041755.1	Canis_familiaris.CanFam3.1.ncrna	2.659178	2.56E-05	0.000202
ENSCAFT00000041801.1	Canis_familiaris.CanFam3.1.ncrna	3.243791	0.000316	1.85E-06
ENSCAFT00000041844.1	Canis_familiaris.CanFam3.1.ncrna	4.91213	9.67E-05	9.35E-07

ENSCAFT00000042184.1	Canis_familiaris.CanFam3.1.ncrna	2.733918	3.76E-06	0.000285
ENSCAFT00000042192.1	Canis_familiaris.CanFam3.1.ncrna	2.662135	1.67E-06	0.024615
ENSCAFT00000042310.1	Canis_familiaris.CanFam3.1.ncrna	4.374603	0.000219	0.002003
ENSCAFT00000042478.1	Canis_familiaris.CanFam3.1.ncrna	2.256156	1.15E-05	0.001764
ENSCAFT00000042508.1	Canis_familiaris.CanFam3.1.ncrna	3.514564	0.031749	1.3E-08
ENSCAFT00000042523.1	Canis_familiaris.CanFam3.1.ncrna	7.496863	0.094298	2.21E-20
ENSCAFT00000042554.1	Canis_familiaris.CanFam3.1.ncrna	2.422975	2.34E-05	0.003628
ENSCAFT00000042647.1	Canis_familiaris.CanFam3.1.ncrna	2.506718	5.21E-05	0.000852
ENSCAFT00000045020.2	Canis_familiaris.CanFam3.1.ncrna	76.26568	5.01E-05	2.54E-15
ENSCAFT00000046510.2	Canis_familiaris.CanFam3.1.ncrna	2.563101	2.66E-06	0.002393
ENSCAFT00000047429.2	Canis_familiaris.CanFam3.1.ncrna	34.05454	3.1E-06	1.03E-14
ENSCAFT00000048079.2	Canis_familiaris.CanFam3.1.ncrna	3.092597	1.19E-06	0.013105
ENSCAFT00000048317.2	Canis_familiaris.CanFam3.1.ncrna	18.0989	3.88E-06	3.15E-13
ENSCAFT00000048833.1	Canis_familiaris.CanFam3.1.ncrna	3.074443	1.74E-06	0.001501
ENSCAFT00000049339.2	Canis_familiaris.CanFam3.1.ncrna	5.269515	8.01E-06	4.25E-09
ENSCAFT00000049442.1	Canis_familiaris.CanFam3.1.ncrna	5.460818	1E-06	0.000458
ENSCAFT00000050576.2	Canis_familiaris.CanFam3.1.ncrna	13.44432	1.71E-06	1.71E-08
ENSCAFT00000052019.2	Canis_familiaris.CanFam3.1.ncrna	2.211238	1.33E-06	0.04908
ENSCAFT00000053263.2	Canis_familiaris.CanFam3.1.ncrna	2.344043	3.94E-06	0.010683
ENSCAFT00000054353.2	Canis_familiaris.CanFam3.1.ncrna	7.731329	1.79E-06	3.62E-06
ENSCAFT00000055450.2	Canis_familiaris.CanFam3.1.ncrna	38.98995	1.52E-05	1.29E-11
ENSCAFT00000055844.2	Canis_familiaris.CanFam3.1.ncrna	4.630567	1.03E-06	0.00046
ENSCAFT00000057618.2	Canis_familiaris.CanFam3.1.ncrna	31.50611	3.32E-06	1.23E-17
ENSCAFT00000058363.2	Canis_familiaris.CanFam3.1.ncrna	8.559102	1.39E-05	7.15E-17
ENSCAFT00000060125.1	Canis_familiaris.CanFam3.1.ncrna	2.938166	0.001607	1.29E-05
ENSCAFT00000060175.1	Canis_familiaris.CanFam3.1.ncrna	8.820781	3.12E-06	1.85E-10
ENSCAFT00000062308.1	Canis_familiaris.CanFam3.1.ncrna	3.000077	1.19E-05	0.000821
ENSCAFT00000064728.1	Canis_familiaris.CanFam3.1.ncrna	3.463127	8.42E-07	0.005661
ENSCAFT00000065241.1	Canis_familiaris.CanFam3.1.ncrna	3.158903	1.15E-06	0.005172
ENSCAFT00000065478.1	Canis_familiaris.CanFam3.1.ncrna	37.46816	3.98E-06	1.16E-15
ENSCAFT00000065653.1	Canis_familiaris.CanFam3.1.ncrna	5.041301	1.86E-06	0.000174
ENSCAFT00000066767.1	Canis_familiaris.CanFam3.1.ncrna	2.373986	0.002673	0.002518
ENSCAFT00000066894.1	Canis_familiaris.CanFam3.1.ncrna	5.231289	1.07E-06	0.000331
ENSCAFT00000067106.1	Canis_familiaris.CanFam3.1.ncrna	21.96015	0.000552	2.72E-24
ENSCAFT00000068244.1	Canis_familiaris.CanFam3.1.ncrna	34.00349	3.13E-06	2.5E-17
ENSCAFT00000068387.1	Canis_familiaris.CanFam3.1.ncrna	26.35566	7.84E-06	1.42E-06
ENSCAFT00000068400.1	Canis_familiaris.CanFam3.1.ncrna	3.229586	1.65E-06	0.00564
ENSCAFT00000069248.1	Canis_familiaris.CanFam3.1.ncrna	24.26052	6.31E-06	1.03E-09
ENSCAFT00000069599.1	Canis_familiaris.CanFam3.1.ncrna	5.089041	0.011152	8.61E-12
ENSCAFT00000069768.1	Canis_familiaris.CanFam3.1.ncrna	36.67164	1.8E-06	1.85E-10
ENSCAFT00000070009.1	Canis_familiaris.CanFam3.1.ncrna	26.17378	1.15E-05	3.71E-17
ENSCAFT00000070207.1	Canis_familiaris.CanFam3.1.ncrna	6.332163	1.28E-06	5.19E-05
ENSCAFT00000070357.1	Canis_familiaris.CanFam3.1.ncrna	22.61724	2.06E-05	1.13E-07
ENSCAFT00000071085.1	Canis_familiaris.CanFam3.1.ncrna	67.57622	8.08E-06	1.49E-07
ENSCAFT00000071088.1	Canis_familiaris.CanFam3.1.ncrna	5.614898	1.71E-06	5.65E-05
ENSCAFT00000072181.1	Canis_familiaris.CanFam3.1.ncrna	32.5724	1.63E-05	4.82E-12
ENSCAFT00000073679.1	Canis_familiaris.CanFam3.1.ncrna	5.922907	1.04E-06	4.33E-05
ENSCAFT00000073722.1	Canis_familiaris.CanFam3.1.ncrna	3.35992	8.62E-07	0.017693
ENSCAFT00000073892.1	Canis_familiaris.CanFam3.1.ncrna	2.360357	1.09E-05	0.037005
ENSCAFT00000073922.1	Canis_familiaris.CanFam3.1.ncrna	6.184586	9.46E-06	1.47E-07

ENSCAFT00000075289.1	Canis_familiaris.CanFam3.1.ncrna	4.625245	1.92E-06	0.00031
ENSCAFT00000075973.1	Canis_familiaris.CanFam3.1.ncrna	18.29283	7.09E-06	9.96E-12
ENSCAFT00000076148.1	Canis_familiaris.CanFam3.1.ncrna	4.81694	1.58E-06	1.41E-05
ENSCAFT00000077466.1	Canis_familiaris.CanFam3.1.ncrna	29.83151	1.96E-05	4.46E-10
ENSCAFT00000077553.1	Canis_familiaris.CanFam3.1.ncrna	18.24737	1.63E-06	1.75E-07
ENSCAFT00000077651.1	Canis_familiaris.CanFam3.1.ncrna	4.050959	2.05E-06	0.000386
ENSCAFT00000078085.1	Canis_familiaris.CanFam3.1.ncrna	6.349253	1.75E-06	2.76E-06
ENSCAFT00000078924.1	Canis_familiaris.CanFam3.1.ncrna	14.35587	1.06E-06	9.59E-08
ENSCAFT00000080758.1	Canis_familiaris.CanFam3.1.ncrna	5.792444	7.4E-06	0.006226
ENSCAFT00000080814.1	Canis_familiaris.CanFam3.1.ncrna	29.23935	1.83E-06	2.38E-10
ENSCAFT00000080913.1	Canis_familiaris.CanFam3.1.ncrna	2.941546	3.74E-06	0.004267
ENSCAFT00000081225.1	Canis_familiaris.CanFam3.1.ncrna	2.988402	9.51E-06	0.007265
ENSCAFT00000081513.1	Canis_familiaris.CanFam3.1.ncrna	8.312788	4.63E-06	8.56E-11
ENSCAFT00000081833.1	Canis_familiaris.CanFam3.1.ncrna	25.97221	3.09E-06	3.87E-16
ENSCAFT00000081918.1	Canis_familiaris.CanFam3.1.ncrna	26.85391	1.69E-06	7.61E-10
ENSCAFT00000082704.1	Canis_familiaris.CanFam3.1.ncrna	4.881767	1.09E-06	0.000261
ENSCAFT00000083585.1	Canis_familiaris.CanFam3.1.ncrna	13.16985	1.64E-05	3.25E-05
ENSCAFT00000084178.1	Canis_familiaris.CanFam3.1.ncrna	4.643534	1.45E-06	0.000104
ENSCAFT00000084345.1	Canis_familiaris.CanFam3.1.ncrna	3.529136	1.2E-06	0.008252
ENSCAFT00000084741.1	Canis_familiaris.CanFam3.1.ncrna	11.30432	2.44E-06	2.33E-05
ENSCAFT00000084845.1	Canis_familiaris.CanFam3.1.ncrna	21.38366	3.1E-06	4.56E-16
ENSCAFT00000085433.1	Canis_familiaris.CanFam3.1.ncrna	4.796329	1.81E-06	0.000236
ENSCAFT00000085829.1	Canis_familiaris.CanFam3.1.ncrna	7.485628	1.26E-06	1.8E-05
ENSCAFT00000086488.1	Canis_familiaris.CanFam3.1.ncrna	25.76575	1.53E-05	6.71E-15
ENSCAFT00000087483.1	Canis_familiaris.CanFam3.1.ncrna	6.334036	1.32E-06	0.018794
ENSCAFT00000087504.1	Canis_familiaris.CanFam3.1.ncrna	4.878291	1.1E-06	0.000257
ENSCAFT00000089886.1	Canis_familiaris.CanFam3.1.ncrna	4.68781	1.01E-06	0.045866
ENSCAFT00000089995.1	Canis_familiaris.CanFam3.1.ncrna	9.442196	5.73E-06	0.000196
ENSCAFT00000090034.1	Canis_familiaris.CanFam3.1.ncrna	4.489652	0.000135	6.32E-08
ENSCAFT00000091326.1	Canis_familiaris.CanFam3.1.ncrna	3.157786	6.15E-06	0.001303
ENSCAFT00000091455.1	Canis_familiaris.CanFam3.1.ncrna	19.96751	8.53E-05	4.98E-07
ENSCAFT00000091981.1	Canis_familiaris.CanFam3.1.ncrna	11.50848	2.01E-05	3.56E-15
ENSCAFT00000092628.1	Canis_familiaris.CanFam3.1.ncrna	6.288212	1.63E-06	1.77E-05
ENSCAFT00000093171.1	Canis_familiaris.CanFam3.1.ncrna	2.899841	1.51E-06	0.017566
ENSCAFT00000093237.1	Canis_familiaris.CanFam3.1.ncrna	6.34144	9.6E-07	0.000262
ENSCAFT00000093238.1	Canis_familiaris.CanFam3.1.ncrna	6.22914	7.47E-06	1.2E-06
ENSCAFT00000093391.1	Canis_familiaris.CanFam3.1.ncrna	3.961607	0.003809	3.49E-05
ENSCAFT00000093415.1	Canis_familiaris.CanFam3.1.ncrna	5.011948	2.19E-06	0.000226
ENST00000301665.8	Homo_sapiens.GRCh38.ncrna	12.58278	2.61E-06	2.86E-10
ENST00000360737.4	Homo_sapiens.GRCh38.ncrna	7.578737	5.36E-06	4.01E-05
ENST00000362330.2	Homo_sapiens.GRCh38.ncrna	8.688266	6.52E-06	5.72E-14
ENST00000362415.1	Homo_sapiens.GRCh38.ncrna	2.295562	2.86E-06	0.026881
ENST00000362433.1	Homo_sapiens.GRCh38.ncrna	7.432456	1.3E-05	7.48E-07
ENST00000362554.1	Homo_sapiens.GRCh38.ncrna	2.975315	2.88E-06	0.013153
ENST00000362886.1	Homo_sapiens.GRCh38.ncrna	12.06448	1.05E-06	2.51E-06
ENST00000362931.1	Homo_sapiens.GRCh38.ncrna	3.606635	7.63E-06	0.00395
ENST00000363005.1	Homo_sapiens.GRCh38.ncrna	8.618871	3.47E-06	3.87E-06
ENST00000363341.1	Homo_sapiens.GRCh38.ncrna	4.848087	7.17E-06	1.92E-05
ENST00000363391.1	Homo_sapiens.GRCh38.ncrna	7.041175	1.11E-06	1.85E-05
ENST00000363558.1	Homo_sapiens.GRCh38.ncrna	8.613227	9.01E-06	1.85E-07

ENST00000363566.1	Homo_sapiens.GRCh38.ncrna	23.53724	2.04E-05	8.28E-19
ENST00000363667.1	Homo_sapiens.GRCh38.ncrna	10.91417	2.1E-05	1.64E-07
ENST00000363702.1	Homo_sapiens.GRCh38.ncrna	7.046725	1.28E-06	0.001047
ENST00000363745.1	Homo_sapiens.GRCh38.ncrna	11.24003	3.08E-06	8.23E-12
ENST00000363867.1	Homo_sapiens.GRCh38.ncrna	11.62945	3.23E-06	8.58E-06
ENST00000364201.1	Homo_sapiens.GRCh38.ncrna	3.212534	5.61E-06	0.016009
ENST00000364251.1	Homo_sapiens.GRCh38.ncrna	4.063192	1.03E-06	0.011052
ENST00000364308.1	Homo_sapiens.GRCh38.ncrna	9.465076	2.72E-05	1.61E-05
ENST00000364600.1	Homo_sapiens.GRCh38.ncrna	3.12111	2.47E-06	0.003167
ENST00000364659.1	Homo_sapiens.GRCh38.ncrna	2.880419	5.22E-06	0.032425
ENST00000364854.1	Homo_sapiens.GRCh38.ncrna	11.12695	1.1E-06	3.01E-05
ENST00000364908.1	Homo_sapiens.GRCh38.ncrna	3.746068	1.66E-06	0.000421
ENST00000364930.1	Homo_sapiens.GRCh38.ncrna	7.040736	5.91E-05	2.21E-07
ENST00000364948.1	Homo_sapiens.GRCh38.ncrna	10.57124	5.32E-06	1.92E-10
ENST00000365063.1	Homo_sapiens.GRCh38.ncrna	8.057625	1.96E-06	0.000235
ENST00000365068.1	Homo_sapiens.GRCh38.ncrna	19.22264	1.57E-05	2.52E-18
ENST00000365157.1	Homo_sapiens.GRCh38.ncrna	5.213012	1.57E-06	1.16E-05
ENST00000365208.1	Homo_sapiens.GRCh38.ncrna	14.36097	5.13E-06	1.86E-07
ENST00000365271.1	Homo_sapiens.GRCh38.ncrna	6.159046	1.77E-06	0.000111
ENST00000365440.1	Homo_sapiens.GRCh38.ncrna	27.85936	1.36E-06	1.1E-08
ENST00000383924.1	Homo_sapiens.GRCh38.ncrna	4.906791	3.6E-06	3.68E-05
ENST00000384113.1	Homo_sapiens.GRCh38.ncrna	2.9998	5.46E-06	0.022235
ENST00000384123.1	Homo_sapiens.GRCh38.ncrna	3.06594	5.45E-06	0.014344
ENST00000384251.1	Homo_sapiens.GRCh38.ncrna	3.182058	5.56E-06	0.017412
ENST00000384282.1	Homo_sapiens.GRCh38.ncrna	5.288536	1.83E-06	0.000295
ENST00000384290.1	Homo_sapiens.GRCh38.ncrna	3.055267	5.51E-06	0.015798
ENST00000384347.1	Homo_sapiens.GRCh38.ncrna	23.44983	1.14E-06	5.36E-08
ENST00000384358.1	Homo_sapiens.GRCh38.ncrna	4.365402	1.73E-06	0.001186
ENST00000384432.1	Homo_sapiens.GRCh38.ncrna	3.028152	5.45E-06	0.022318
ENST00000384478.1	Homo_sapiens.GRCh38.ncrna	9.008372	4.48E-05	4.92E-07
ENST00000384511.1	Homo_sapiens.GRCh38.ncrna	49.86292	9.34E-06	8.48E-08
ENST00000384541.1	Homo_sapiens.GRCh38.ncrna	13.69059	4.13E-06	7.44E-08
ENST00000384562.1	Homo_sapiens.GRCh38.ncrna	3.852064	1.77E-06	5.48E-05
ENST00000384665.1	Homo_sapiens.GRCh38.ncrna	2.97737	5.32E-06	0.022824
ENST00000384673.1	Homo_sapiens.GRCh38.ncrna	8.189761	3.45E-06	0.000795
ENST00000384743.1	Homo_sapiens.GRCh38.ncrna	3.758283	2.12E-06	0.020725
ENST00000384763.1	Homo_sapiens.GRCh38.ncrna	3.452173	6.35E-06	0.002768
ENST00000384766.1	Homo_sapiens.GRCh38.ncrna	3.01441	5.33E-06	0.020187
ENST00000391004.1	Homo_sapiens.GRCh38.ncrna	3.085601	5.4E-06	0.014857
ENST00000391033.1	Homo_sapiens.GRCh38.ncrna	5.767356	6.55E-06	5.15E-05
ENST00000410413.1	Homo_sapiens.GRCh38.ncrna	4.655609	0.003228	2.11E-07
ENST00000410462.2	Homo_sapiens.GRCh38.ncrna	17.3154	1.52E-06	4.48E-06
ENST00000410577.1	Homo_sapiens.GRCh38.ncrna	8.121738	5.8E-05	9.44E-08
ENST00000410717.1	Homo_sapiens.GRCh38.ncrna	6.779975	4.91E-06	0.000382
ENST00000410949.1	Homo_sapiens.GRCh38.ncrna	7.058204	4.8E-06	1.35E-06
ENST00000416366.1	Homo_sapiens.GRCh38.ncrna	4.480305	3.82E-06	1.39E-05
ENST00000429798.1	Homo_sapiens.GRCh38.ncrna	2.726743	2.02E-05	0.000253
ENST00000431311.1	Homo_sapiens.GRCh38.ncrna	2.348409	5.82E-05	0.003917
ENST00000436612.5	Homo_sapiens.GRCh38.ncrna	10.87856	2.65E-06	3.45E-10
ENST00000441095.2	Homo_sapiens.GRCh38.ncrna	4.493826	1.02E-06	0.016126

ENST00000452982.1	Homo_sapiens.GRCh38.ncrna	2.485058	3.85E-05	0.001862
ENST00000457402.1	Homo_sapiens.GRCh38.ncrna	22.88955	1.69E-05	1.25E-16
ENST00000459006.1	Homo_sapiens.GRCh38.ncrna	3.082865	5.46E-06	0.009317
ENST00000467187.1	Homo_sapiens.GRCh38.ncrna	14.27972	2.56E-06	0.000269
ENST00000493616.1	Homo_sapiens.GRCh38.ncrna	129.5369	2.73E-06	3.01E-08
ENST00000499525.1	Homo_sapiens.GRCh38.ncrna	3.696885	0.000322	5.35E-06
ENST00000516362.1	Homo_sapiens.GRCh38.ncrna	3.18673	5.5E-06	0.014582
ENST00000516507.1	Homo_sapiens.GRCh38.ncrna	9.751286	3E-06	1.26E-10
ENST00000516508.1	Homo_sapiens.GRCh38.ncrna	2.710888	2.86E-06	0.022703
ENST00000516678.1	Homo_sapiens.GRCh38.ncrna	5.645309	1.65E-05	6.9E-08
ENST00000516950.1	Homo_sapiens.GRCh38.ncrna	7.940574	5.72E-06	2.99E-13
ENST00000521204.1	Homo_sapiens.GRCh38.ncrna	17.65437	1.33E-05	5.35E-05
ENST00000528151.1	Homo_sapiens.GRCh38.ncrna	12.3473	1.88E-05	4.35E-10
ENST00000539163.1	Homo_sapiens.GRCh38.ncrna	7.603609	2.6E-06	1.48E-05
ENST00000548322.1	Homo_sapiens.GRCh38.ncrna	3.78946	2.33E-05	4.55E-06
ENST00000548819.5	Homo_sapiens.GRCh38.ncrna	3.756406	2.31E-05	3.81E-06
ENST00000569473.1	Homo_sapiens.GRCh38.ncrna	4.043535	8.63E-05	9.01E-06
ENST00000570843.1	Homo_sapiens.GRCh38.ncrna	2.964026	0.002272	0.000367
ENST00000577746.1	Homo_sapiens.GRCh38.ncrna	6.269161	1.19E-06	0.000972
ENST00000578774.1	Homo_sapiens.GRCh38.ncrna	6.303817	4.35E-06	5.03E-08
ENST00000580344.1	Homo_sapiens.GRCh38.ncrna	12.93953	8.45E-05	2.44E-10
ENST00000582965.1	Homo_sapiens.GRCh38.ncrna	2.202631	4.51E-06	0.017487
ENST00000584676.1	Homo_sapiens.GRCh38.ncrna	2.196157	3.27E-06	0.023531
ENST00000602461.1	Homo_sapiens.GRCh38.ncrna	9.012855	1.1E-06	6.48E-06
ENST00000606971.5	Homo_sapiens.GRCh38.ncrna	3.784999	2.01E-06	0.008589
ENST00000609952.1	Homo_sapiens.GRCh38.ncrna	12.45593	2.76E-06	4.66E-06
ENST00000611570.1	Homo_sapiens.GRCh38.ncrna	3.088595	5.42E-06	0.021622
ENST00000619431.1	Homo_sapiens.GRCh38.ncrna	3.70823	0.000322	5.37E-06
ENST00000628590.1	Homo_sapiens.GRCh38.ncrna	2.068263	3.9E-06	0.036524
ENST00000630918.1	Homo_sapiens.GRCh38.ncrna	29.26489	2.68E-06	7.62E-14
ENST00000635451.1	Homo_sapiens.GRCh38.ncrna	2.486499	3.85E-05	0.001871
ENST00000648228.1	Homo_sapiens.GRCh38.ncrna	11.31092	5.41E-05	6.52E-05
ENST00000649079.1	Homo_sapiens.GRCh38.ncrna	2.34682	5.82E-05	0.004041
ENST00000650189.1	Homo_sapiens.GRCh38.ncrna	11.5984	5.46E-05	5.45E-05
ENST00000651140.1	Homo_sapiens.GRCh38.ncrna	13.32647	4.58E-05	2.54E-07
ENST00000653121.1	Homo_sapiens.GRCh38.ncrna	4.066342	1.61E-06	0.004338
ENST00000654717.1	Homo_sapiens.GRCh38.ncrna	6.347488	2.38E-06	2.43E-07
ENST00000655600.1	Homo_sapiens.GRCh38.ncrna	6.265648	0.050494	2.55E-11
ENST00000660100.1	Homo_sapiens.GRCh38.ncrna	13.53333	4.59E-05	3.03E-07
ENST00000660425.1	Homo_sapiens.GRCh38.ncrna	6.678963	5.23E-06	1.49E-06
ENST00000665304.1	Homo_sapiens.GRCh38.ncrna	37.56806	1.31E-06	1.09E-10
ENST00000668190.1	Homo_sapiens.GRCh38.ncrna	3.710152	2.66E-05	1.4E-05
ENST00000668620.1	Homo_sapiens.GRCh38.ncrna	10.63348	2.59E-06	3.53E-09
ENST00000670361.1	Homo_sapiens.GRCh38.ncrna	2.486413	3.85E-05	0.001919

Ch.2 : Differentially expressed down-regulated ncRNAs (except miRNA) between KMeC normoxic and hypoxic cell lines.

Small RNA - Name	Small RNA - Resource	Fold change	Weighted difference	FDR p
ENSCAFT00000007735.3	Canis_familiaris.CanFam3.1.ncrna	-4.06944	-2.6E-06	0.000181
ENSCAFT00000016593.5	Canis_familiaris.CanFam3.1.ncrna	-3.59813	-6.5E-06	3.05E-05
ENSCAFT00000033061.2	Canis_familiaris.CanFam3.1.ncrna	-3.48005	-3.4E-05	1.95E-06
ENSCAFT00000033121.2	Canis_familiaris.CanFam3.1.ncrna	-2.95285	-6.2E-05	0.003257
ENSCAFT00000033169.2	Canis_familiaris.CanFam3.1.ncrna	-3.52121	-0.00018	0.038423
ENSCAFT00000033175.1	Canis_familiaris.CanFam3.1.ncrna	-2.47674	-7.9E-05	0.014962
ENSCAFT00000033683.2	Canis_familiaris.CanFam3.1.ncrna	-2.65315	-5.7E-05	0.01022
ENSCAFT00000034056.1	Canis_familiaris.CanFam3.1.ncrna	-4.32524	-8.9E-05	0.028349
ENSCAFT00000034272.1	Canis_familiaris.CanFam3.1.ncrna	-2.39649	-2.4E-05	0.028382
ENSCAFT00000034450.2	Canis_familiaris.CanFam3.1.ncrna	-4.09431	-1.6E-06	0.0003
ENSCAFT00000035050.1	Canis_familiaris.CanFam3.1.ncrna	-2.49983	-0.00489	0.02174
ENSCAFT00000040080.2	Canis_familiaris.CanFam3.1.ncrna	-3.10519	-0.00597	0.004698
ENSCAFT00000040120.1	Canis_familiaris.CanFam3.1.ncrna	-26.0479	-1.6E-05	1.11E-22
ENSCAFT00000040246.1	Canis_familiaris.CanFam3.1.ncrna	-3.38572	-3E-06	0.000161
ENSCAFT00000040284.1	Canis_familiaris.CanFam3.1.ncrna	-4.74994	-8E-05	4.81E-08
ENSCAFT00000040611.1	Canis_familiaris.CanFam3.1.ncrna	-2.62423	-1.5E-06	0.013232
ENSCAFT00000040756.1	Canis_familiaris.CanFam3.1.ncrna	-2.54408	-0.00015	0.006417
ENSCAFT00000041176.1	Canis_familiaris.CanFam3.1.ncrna	-2.36074	-4.2E-06	0.037005
ENSCAFT00000041229.2	Canis_familiaris.CanFam3.1.ncrna	-2.65101	-1.3E-06	0.038151
ENSCAFT00000041502.1	Canis_familiaris.CanFam3.1.ncrna	-4.10787	-1.3E-06	0.004214
ENSCAFT00000041597.1	Canis_familiaris.CanFam3.1.ncrna	-4.40365	-9.5E-06	2.54E-06
ENSCAFT00000041641.1	Canis_familiaris.CanFam3.1.ncrna	-2.88104	-9.9E-07	0.040905
ENSCAFT00000041961.2	Canis_familiaris.CanFam3.1.ncrna	-21.4322	-1.1E-06	1.33E-07
ENSCAFT00000041963.2	Canis_familiaris.CanFam3.1.ncrna	-4.76294	-2.3E-06	9.27E-05
ENSCAFT00000042035.2	Canis_familiaris.CanFam3.1.ncrna	-3.36723	-1.1E-06	0.028169
ENSCAFT00000042047.1	Canis_familiaris.CanFam3.1.ncrna	-3.47885	-4.2E-06	4.38E-06
ENSCAFT00000042435.2	Canis_familiaris.CanFam3.1.ncrna	-3.83597	-1.4E-06	0.011239
ENSCAFT00000043246.1	Canis_familiaris.CanFam3.1.ncrna	-2.57392	-0.00681	0.014908
ENSCAFT00000043334.2	Canis_familiaris.CanFam3.1.ncrna	-5.5319	-2.6E-06	1.34E-06
ENSCAFT00000046019.1	Canis_familiaris.CanFam3.1.ncrna	-3.09327	-1.4E-06	0.004014
ENSCAFT00000046993.1	Canis_familiaris.CanFam3.1.ncrna	-4.16911	-0.00195	0.007817
ENSCAFT00000047517.1	Canis_familiaris.CanFam3.1.ncrna	-2.5726	-0.00681	0.014929
ENSCAFT00000048043.2	Canis_familiaris.CanFam3.1.ncrna	-2.6241	-2.9E-05	8.21E-05
ENSCAFT00000050215.2	Canis_familiaris.CanFam3.1.ncrna	-4.08987	-9.3E-07	0.020143
ENSCAFT00000050284.2	Canis_familiaris.CanFam3.1.ncrna	-76.5768	-2.4E-06	6.49E-14
ENSCAFT00000050441.2	Canis_familiaris.CanFam3.1.ncrna	-2.41866	-4E-06	0.0083
ENSCAFT00000050553.2	Canis_familiaris.CanFam3.1.ncrna	-2.96529	-1.6E-06	0.003167
ENSCAFT00000050561.2	Canis_familiaris.CanFam3.1.ncrna	-3.2862	-9.3E-07	0.014696
ENSCAFT00000050804.2	Canis_familiaris.CanFam3.1.ncrna	-5.08941	-1.2E-06	0.001038
ENSCAFT00000050988.2	Canis_familiaris.CanFam3.1.ncrna	-3.64975	-4E-06	7.91E-05
ENSCAFT00000051044.2	Canis_familiaris.CanFam3.1.ncrna	-5.01199	-1.8E-06	9.75E-06
ENSCAFT00000051229.2	Canis_familiaris.CanFam3.1.ncrna	-4.06246	-6.1E-07	0.022035
ENSCAFT00000051294.2	Canis_familiaris.CanFam3.1.ncrna	-3.96352	-5E-06	1.03E-05
ENSCAFT00000051352.2	Canis_familiaris.CanFam3.1.ncrna	-5.44236	-1.1E-06	0.000545
ENSCAFT00000051400.2	Canis_familiaris.CanFam3.1.ncrna	-5.57898	-5.5E-06	0.000147
ENSCAFT00000051462.2	Canis_familiaris.CanFam3.1.ncrna	-9.4293	-2.7E-05	2.21E-20
ENSCAFT00000051768.2	Canis_familiaris.CanFam3.1.ncrna	-2.85149	-1.3E-06	0.020458
ENSCAFT00000051877.2	Canis_familiaris.CanFam3.1.ncrna	-11.6862	-1.9E-05	7.05E-21

ENSCAFT00000051907.2	Canis_familiaris.CanFam3.1.ncrna	-8.4648	-2.1E-05	5.48E-16
ENSCAFT00000052046.2	Canis_familiaris.CanFam3.1.ncrna	-4.44521	-5.2E-06	4.09E-08
ENSCAFT00000052336.2	Canis_familiaris.CanFam3.1.ncrna	-2.66697	-1.4E-06	0.020236
ENSCAFT00000052583.2	Canis_familiaris.CanFam3.1.ncrna	-8.75225	-1.3E-06	2.65E-06
ENSCAFT00000052646.2	Canis_familiaris.CanFam3.1.ncrna	-9.67643	-7E-06	8.07E-10
ENSCAFT00000052731.2	Canis_familiaris.CanFam3.1.ncrna	-10.5415	-2.9E-05	4.64E-19
ENSCAFT00000052741.2	Canis_familiaris.CanFam3.1.ncrna	-4.46282	-2.5E-06	7.18E-05
ENSCAFT00000052924.2	Canis_familiaris.CanFam3.1.ncrna	-4.78733	-1.2E-06	0.000658
ENSCAFT00000052972.2	Canis_familiaris.CanFam3.1.ncrna	-2.91064	-3.5E-06	0.000435
ENSCAFT00000053002.2	Canis_familiaris.CanFam3.1.ncrna	-2.41329	-3.7E-06	0.004397
ENSCAFT00000053050.2	Canis_familiaris.CanFam3.1.ncrna	-4.7408	-2.4E-05	2.55E-09
ENSCAFT00000053161.2	Canis_familiaris.CanFam3.1.ncrna	-7.63283	-1.1E-05	1.1E-14
ENSCAFT00000053400.2	Canis_familiaris.CanFam3.1.ncrna	-3.61688	-1.2E-06	0.005887
ENSCAFT00000053497.2	Canis_familiaris.CanFam3.1.ncrna	-3.6877	-4.8E-06	6.65E-05
ENSCAFT00000053760.2	Canis_familiaris.CanFam3.1.ncrna	-3.30357	-3.8E-06	0.000236
ENSCAFT00000053761.2	Canis_familiaris.CanFam3.1.ncrna	-8.03012	-2.2E-05	1.27E-16
ENSCAFT00000053801.2	Canis_familiaris.CanFam3.1.ncrna	-2.65895	-1.5E-06	0.044361
ENSCAFT00000053808.2	Canis_familiaris.CanFam3.1.ncrna	-3.03672	-8.2E-07	0.037908
ENSCAFT00000053869.2	Canis_familiaris.CanFam3.1.ncrna	-6.25668	-1.2E-05	1.7E-10
ENSCAFT00000053871.2	Canis_familiaris.CanFam3.1.ncrna	-3.34218	-1.1E-06	0.013211
ENSCAFT00000053998.2	Canis_familiaris.CanFam3.1.ncrna	-3.9596	-2.1E-06	0.002413
ENSCAFT00000054008.2	Canis_familiaris.CanFam3.1.ncrna	-8.85146	-1.2E-06	1.22E-05
ENSCAFT00000054016.2	Canis_familiaris.CanFam3.1.ncrna	-6.89727	-4.2E-06	2.55E-06
ENSCAFT00000054157.2	Canis_familiaris.CanFam3.1.ncrna	-3.70687	-6.9E-07	0.039675
ENSCAFT00000054168.2	Canis_familiaris.CanFam3.1.ncrna	-7.56888	-1.4E-05	1.05E-14
ENSCAFT00000054330.2	Canis_familiaris.CanFam3.1.ncrna	-9.99419	-2.8E-05	1.84E-17
ENSCAFT00000054429.2	Canis_familiaris.CanFam3.1.ncrna	-3.23967	-3.7E-06	0.000406
ENSCAFT00000054434.2	Canis_familiaris.CanFam3.1.ncrna	-7.02054	-1.7E-05	1.15E-16
ENSCAFT00000054597.2	Canis_familiaris.CanFam3.1.ncrna	-5.02537	-2.7E-06	0.000128
ENSCAFT00000054628.2	Canis_familiaris.CanFam3.1.ncrna	-3.45624	-1E-06	0.008772
ENSCAFT00000054629.2	Canis_familiaris.CanFam3.1.ncrna	-4.86004	-1.2E-06	0.000916
ENSCAFT00000054875.2	Canis_familiaris.CanFam3.1.ncrna	-6.10755	-9.3E-07	0.000522
ENSCAFT00000054877.2	Canis_familiaris.CanFam3.1.ncrna	-3.80946	-2.1E-06	0.000375
ENSCAFT00000055066.2	Canis_familiaris.CanFam3.1.ncrna	-3.42906	-9.1E-07	0.011194
ENSCAFT00000055237.2	Canis_familiaris.CanFam3.1.ncrna	-5.10243	-2.2E-05	2.19E-10
ENSCAFT00000055436.2	Canis_familiaris.CanFam3.1.ncrna	-2.78235	-4E-06	0.003608
ENSCAFT00000055803.2	Canis_familiaris.CanFam3.1.ncrna	-7.63746	-9.2E-06	1.38E-11
ENSCAFT00000055888.2	Canis_familiaris.CanFam3.1.ncrna	-2.53912	-6.6E-06	0.005799
ENSCAFT00000055985.2	Canis_familiaris.CanFam3.1.ncrna	-4.26194	-2.1E-06	0.00046
ENSCAFT00000056034.2	Canis_familiaris.CanFam3.1.ncrna	-3.42493	-8.4E-07	0.017665
ENSCAFT00000056046.2	Canis_familiaris.CanFam3.1.ncrna	-5.94383	-2.2E-05	2.54E-15
ENSCAFT00000056056.2	Canis_familiaris.CanFam3.1.ncrna	-4.61017	-1.7E-06	3.88E-05
ENSCAFT00000056226.2	Canis_familiaris.CanFam3.1.ncrna	-7.16706	-1.4E-05	3.8E-15
ENSCAFT00000056532.2	Canis_familiaris.CanFam3.1.ncrna	-8.71913	-1.6E-05	6.13E-18
ENSCAFT00000056553.2	Canis_familiaris.CanFam3.1.ncrna	-2.21843	-2.8E-06	0.038021
ENSCAFT00000056555.2	Canis_familiaris.CanFam3.1.ncrna	-9.29104	-2.8E-05	1.04E-18
ENSCAFT00000056610.2	Canis_familiaris.CanFam3.1.ncrna	-6.75311	-5.5E-06	9.27E-09
ENSCAFT00000056639.2	Canis_familiaris.CanFam3.1.ncrna	-9.14964	-1.4E-05	3.63E-17
ENSCAFT00000056766.2	Canis_familiaris.CanFam3.1.ncrna	-7.00256	-1.3E-05	2.96E-13
ENSCAFT00000056824.2	Canis_familiaris.CanFam3.1.ncrna	-21.7255	-6.5E-07	4.77E-05
ENSCAFT00000056894.2	Canis_familiaris.CanFam3.1.ncrna	-9.89697	-4.5E-05	1.24E-18
ENSCAFT00000057138.2	Canis_familiaris.CanFam3.1.ncrna	-4.62672	-5.5E-06	6.56E-08
ENSCAFT00000057153.2	Canis_familiaris.CanFam3.1.ncrna	-9.62165	-2.9E-05	3.66E-20
ENSCAFT00000057435.2	Canis_familiaris.CanFam3.1.ncrna	-4.79312	-3.5E-06	0.000403
ENSCAFT00000057673.2	Canis_familiaris.CanFam3.1.ncrna	-5.61134	-1.3E-05	2.55E-10

ENSCAFT00000057749.2	Canis_familiaris.CanFam3.1.ncrna	-3.13737	-2.1E-06	0.00453
ENSCAFT00000057763.2	Canis_familiaris.CanFam3.1.ncrna	-19.1383	-1.5E-06	3.46E-07
ENSCAFT00000057845.2	Canis_familiaris.CanFam3.1.ncrna	-8.77212	-2.2E-05	4.42E-18
ENSCAFT00000057988.2	Canis_familiaris.CanFam3.1.ncrna	-3.87542	-2.4E-05	8.98E-08
ENSCAFT00000058066.2	Canis_familiaris.CanFam3.1.ncrna	-2.68848	-2.5E-06	0.006869
ENSCAFT00000058153.2	Canis_familiaris.CanFam3.1.ncrna	-4.31113	-6.5E-07	0.014212
ENSCAFT00000058313.2	Canis_familiaris.CanFam3.1.ncrna	-3.77882	-5.4E-06	2.28E-06
ENSCAFT00000058343.2	Canis_familiaris.CanFam3.1.ncrna	-6.99239	-9.3E-07	0.001686
ENSCAFT00000058423.2	Canis_familiaris.CanFam3.1.ncrna	-10.8915	-1.9E-05	1.31E-14
ENSCAFT00000058519.2	Canis_familiaris.CanFam3.1.ncrna	-8.29048	-2.6E-05	1.24E-16
ENSCAFT00000058613.2	Canis_familiaris.CanFam3.1.ncrna	-2.98109	-2.3E-06	0.001118
ENSCAFT00000058633.2	Canis_familiaris.CanFam3.1.ncrna	-9.78356	-9.1E-07	5.24E-05
ENSCAFT00000058705.2	Canis_familiaris.CanFam3.1.ncrna	-2.4848	-8.4E-06	0.000999
ENSCAFT00000059490.1	Canis_familiaris.CanFam3.1.ncrna	-21.0074	-3.6E-06	2.61E-14
ENSCAFT00000059546.1	Canis_familiaris.CanFam3.1.ncrna	-3.23783	-2E-06	0.00851
ENSCAFT00000059586.1	Canis_familiaris.CanFam3.1.ncrna	-3.93589	-9.6E-07	0.005794
ENSCAFT00000059601.1	Canis_familiaris.CanFam3.1.ncrna	-3.10507	-4.2E-06	7.91E-05
ENSCAFT00000059675.1	Canis_familiaris.CanFam3.1.ncrna	-7.98887	-5.6E-06	3.59E-12
ENSCAFT00000059685.1	Canis_familiaris.CanFam3.1.ncrna	-5.8889	-2.2E-06	1.49E-06
ENSCAFT00000059728.1	Canis_familiaris.CanFam3.1.ncrna	-5.69853	-5.6E-06	3.67E-07
ENSCAFT00000059769.1	Canis_familiaris.CanFam3.1.ncrna	-4.36871	-9.9E-07	0.001507
ENSCAFT00000059780.1	Canis_familiaris.CanFam3.1.ncrna	-3.19393	-2E-06	0.000747
ENSCAFT00000059784.1	Canis_familiaris.CanFam3.1.ncrna	-4.12491	-7.4E-07	0.046315
ENSCAFT00000059802.1	Canis_familiaris.CanFam3.1.ncrna	-8.72635	-2.8E-05	8.54E-20
ENSCAFT00000059864.1	Canis_familiaris.CanFam3.1.ncrna	-8.28674	-1.9E-05	4.77E-17
ENSCAFT00000059891.1	Canis_familiaris.CanFam3.1.ncrna	-6.49758	-1.2E-05	8.18E-10
ENSCAFT00000059916.1	Canis_familiaris.CanFam3.1.ncrna	-3.3238	-3.2E-06	0.000177
ENSCAFT00000060209.1	Canis_familiaris.CanFam3.1.ncrna	-4.97409	-6.8E-06	9.71E-07
ENSCAFT00000060327.1	Canis_familiaris.CanFam3.1.ncrna	-2.85084	-5.7E-06	0.000949
ENSCAFT00000060361.1	Canis_familiaris.CanFam3.1.ncrna	-9.26237	-2.4E-05	2E-18
ENSCAFT00000060371.1	Canis_familiaris.CanFam3.1.ncrna	-3.09365	-1.7E-06	0.002958
ENSCAFT00000060498.1	Canis_familiaris.CanFam3.1.ncrna	-3.32325	-9.3E-07	0.022221
ENSCAFT00000060618.1	Canis_familiaris.CanFam3.1.ncrna	-3.03961	-2E-06	0.005794
ENSCAFT00000060624.1	Canis_familiaris.CanFam3.1.ncrna	-5.36449	-4.5E-06	3.9E-06
ENSCAFT00000060683.1	Canis_familiaris.CanFam3.1.ncrna	-3.50031	-1.1E-05	4.75E-06
ENSCAFT00000060777.1	Canis_familiaris.CanFam3.1.ncrna	-8.92053	-1.2E-05	4.69E-14
ENSCAFT00000060839.1	Canis_familiaris.CanFam3.1.ncrna	-5.51818	-5.3E-06	7.03E-08
ENSCAFT00000060873.1	Canis_familiaris.CanFam3.1.ncrna	-5.76052	-1.1E-06	0.000147
ENSCAFT00000060885.1	Canis_familiaris.CanFam3.1.ncrna	-5.08948	-4.2E-06	1.02E-07
ENSCAFT00000060990.1	Canis_familiaris.CanFam3.1.ncrna	-6.62779	-4.8E-06	6.12E-09
ENSCAFT00000061089.1	Canis_familiaris.CanFam3.1.ncrna	-3.56696	-4.8E-06	0.000232
ENSCAFT00000061148.1	Canis_familiaris.CanFam3.1.ncrna	-4.43341	-6.1E-07	0.013324
ENSCAFT00000061327.1	Canis_familiaris.CanFam3.1.ncrna	-6.4625	-1.4E-05	3.6E-13
ENSCAFT00000061563.1	Canis_familiaris.CanFam3.1.ncrna	-3.76456	-4.5E-06	1.46E-05
ENSCAFT00000061597.1	Canis_familiaris.CanFam3.1.ncrna	-3.02229	-6.8E-06	3.08E-05
ENSCAFT00000061601.1	Canis_familiaris.CanFam3.1.ncrna	-4.40623	-3.5E-06	2.55E-06
ENSCAFT00000061679.1	Canis_familiaris.CanFam3.1.ncrna	-13.6183	-2.3E-06	1.77E-09
ENSCAFT00000061682.1	Canis_familiaris.CanFam3.1.ncrna	-2.5143	-5.6E-06	0.023078
ENSCAFT00000061738.1	Canis_familiaris.CanFam3.1.ncrna	-4.78482	-6.7E-06	5.17E-07
ENSCAFT00000061782.1	Canis_familiaris.CanFam3.1.ncrna	-4.02193	-6.9E-07	0.012007
ENSCAFT00000061796.1	Canis_familiaris.CanFam3.1.ncrna	-2.26254	-2E-06	0.049729
ENSCAFT00000061839.1	Canis_familiaris.CanFam3.1.ncrna	-3.34174	-3.2E-06	0.000326
ENSCAFT00000061908.1	Canis_familiaris.CanFam3.1.ncrna	-3.0401	-2.1E-06	0.007506
ENSCAFT00000062001.1	Canis_familiaris.CanFam3.1.ncrna	-5.45803	-9E-07	0.001292
ENSCAFT00000062076.1	Canis_familiaris.CanFam3.1.ncrna	-3.07867	-2.7E-06	0.000702

ENSCAFT00000062132.1	Canis_familiaris.CanFam3.1.ncrna	-4.01828	-9.1E-07	0.003918
ENSCAFT00000062232.1	Canis_familiaris.CanFam3.1.ncrna	-2.97139	-1.7E-06	0.035288
ENSCAFT00000062244.1	Canis_familiaris.CanFam3.1.ncrna	-4.51055	-3.5E-06	6.43E-06
ENSCAFT00000062252.1	Canis_familiaris.CanFam3.1.ncrna	-3.03068	-3E-06	0.000479
ENSCAFT00000062322.1	Canis_familiaris.CanFam3.1.ncrna	-6.64271	-1E-06	0.000147
ENSCAFT00000062640.1	Canis_familiaris.CanFam3.1.ncrna	-4.00906	-2.6E-05	4.82E-07
ENSCAFT00000062658.1	Canis_familiaris.CanFam3.1.ncrna	-7.48816	-6.8E-07	0.001023
ENSCAFT00000062666.1	Canis_familiaris.CanFam3.1.ncrna	-3.82885	-2.2E-06	0.00012
ENSCAFT00000062677.1	Canis_familiaris.CanFam3.1.ncrna	-8.79074	-2.2E-05	8.34E-17
ENSCAFT00000062690.1	Canis_familiaris.CanFam3.1.ncrna	-3.11994	-5.2E-06	4.31E-05
ENSCAFT00000062911.1	Canis_familiaris.CanFam3.1.ncrna	-4.70327	-8.6E-07	0.003805
ENSCAFT00000062920.1	Canis_familiaris.CanFam3.1.ncrna	-2.90723	-1.5E-06	0.021277
ENSCAFT00000063017.1	Canis_familiaris.CanFam3.1.ncrna	-14.4846	-1.4E-06	2.6E-07
ENSCAFT00000063034.1	Canis_familiaris.CanFam3.1.ncrna	-2.21579	-3.8E-06	0.008589
ENSCAFT00000063061.1	Canis_familiaris.CanFam3.1.ncrna	-3.80922	-8.1E-07	0.039484
ENSCAFT00000063107.1	Canis_familiaris.CanFam3.1.ncrna	-3.6716	-8.5E-07	0.008459
ENSCAFT00000063139.1	Canis_familiaris.CanFam3.1.ncrna	-6.51265	-4.9E-06	2.05E-10
ENSCAFT00000063153.1	Canis_familiaris.CanFam3.1.ncrna	-10.0751	-1.7E-05	5.66E-17
ENSCAFT00000063156.1	Canis_familiaris.CanFam3.1.ncrna	-10.8871	-2.4E-05	3.57E-15
ENSCAFT00000063177.1	Canis_familiaris.CanFam3.1.ncrna	-5.688	-2.8E-05	5.74E-11
ENSCAFT00000063197.1	Canis_familiaris.CanFam3.1.ncrna	-7.26061	-7.3E-06	1.98E-11
ENSCAFT00000063208.1	Canis_familiaris.CanFam3.1.ncrna	-8.21879	-5.9E-05	3.15E-17
ENSCAFT00000063359.1	Canis_familiaris.CanFam3.1.ncrna	-3.22453	-3.4E-06	0.000257
ENSCAFT00000063388.1	Canis_familiaris.CanFam3.1.ncrna	-3.14003	-1.3E-06	0.012056
ENSCAFT00000063479.1	Canis_familiaris.CanFam3.1.ncrna	-2.90241	-1.1E-06	0.040505
ENSCAFT00000063843.1	Canis_familiaris.CanFam3.1.ncrna	-2.44569	-1.7E-06	0.026822
ENSCAFT00000063898.1	Canis_familiaris.CanFam3.1.ncrna	-3.53414	-1.3E-06	0.002881
ENSCAFT00000063968.1	Canis_familiaris.CanFam3.1.ncrna	-2.32902	-1.4E-05	0.004694
ENSCAFT00000064145.1	Canis_familiaris.CanFam3.1.ncrna	-4.52568	-4.1E-06	8.6E-06
ENSCAFT00000064184.1	Canis_familiaris.CanFam3.1.ncrna	-3.03163	-2E-06	0.010471
ENSCAFT00000064242.1	Canis_familiaris.CanFam3.1.ncrna	-2.78171	-1.1E-06	0.042597
ENSCAFT00000064276.1	Canis_familiaris.CanFam3.1.ncrna	-9.23279	-2.7E-05	2E-18
ENSCAFT00000064410.1	Canis_familiaris.CanFam3.1.ncrna	-4.70768	-4.9E-07	0.043998
ENSCAFT00000064456.1	Canis_familiaris.CanFam3.1.ncrna	-2.76761	-8.7E-07	0.042324
ENSCAFT00000064506.1	Canis_familiaris.CanFam3.1.ncrna	-5.16857	-4.6E-06	1.65E-05
ENSCAFT00000064560.1	Canis_familiaris.CanFam3.1.ncrna	-4.05614	-1.1E-06	0.016659
ENSCAFT00000064668.1	Canis_familiaris.CanFam3.1.ncrna	-2.74063	-2.4E-06	0.003602
ENSCAFT00000064732.1	Canis_familiaris.CanFam3.1.ncrna	-3.54929	-8.1E-07	0.026164
ENSCAFT00000064814.1	Canis_familiaris.CanFam3.1.ncrna	-7.13277	-1.6E-05	5.84E-12
ENSCAFT00000065011.1	Canis_familiaris.CanFam3.1.ncrna	-8.02267	-1.8E-05	5.14E-17
ENSCAFT00000065040.1	Canis_familiaris.CanFam3.1.ncrna	-3.85233	-5.8E-07	0.044452
ENSCAFT00000065084.1	Canis_familiaris.CanFam3.1.ncrna	-4.89589	-4.6E-06	3.24E-05
ENSCAFT00000065162.1	Canis_familiaris.CanFam3.1.ncrna	-8.62982	-1.6E-05	2.04E-16
ENSCAFT00000065220.1	Canis_familiaris.CanFam3.1.ncrna	-6.98218	-4E-06	3.02E-09
ENSCAFT00000065221.1	Canis_familiaris.CanFam3.1.ncrna	-4.12048	-3.3E-06	7.98E-06
ENSCAFT00000065245.1	Canis_familiaris.CanFam3.1.ncrna	-7.08727	-1.3E-05	8.21E-12
ENSCAFT00000065277.1	Canis_familiaris.CanFam3.1.ncrna	-9.82207	-2.1E-05	5.95E-20
ENSCAFT00000065307.1	Canis_familiaris.CanFam3.1.ncrna	-3.4624	-1E-06	0.015278
ENSCAFT00000065416.1	Canis_familiaris.CanFam3.1.ncrna	-5.33909	-1.7E-06	1.13E-05
ENSCAFT00000065484.1	Canis_familiaris.CanFam3.1.ncrna	-3.63056	-2.9E-06	0.000145
ENSCAFT00000065589.1	Canis_familiaris.CanFam3.1.ncrna	-10.6468	-2.1E-05	1.15E-21
ENSCAFT00000065678.1	Canis_familiaris.CanFam3.1.ncrna	-2.95086	-8.3E-07	0.030309
ENSCAFT00000065700.1	Canis_familiaris.CanFam3.1.ncrna	-3.67095	-1.9E-06	0.004505
ENSCAFT00000065822.1	Canis_familiaris.CanFam3.1.ncrna	-2.82603	-2.3E-06	0.003503
ENSCAFT00000065843.1	Canis_familiaris.CanFam3.1.ncrna	-4.98211	-1.1E-06	0.000797

ENSCAFT00000065874.1	Canis_familiaris.CanFam3.1.ncrna	-6.95365	-2.9E-06	1.81E-07
ENSCAFT00000065929.1	Canis_familiaris.CanFam3.1.ncrna	-7.89073	-7.3E-07	0.000744
ENSCAFT00000065931.1	Canis_familiaris.CanFam3.1.ncrna	-5.80654	-6.6E-06	1.75E-10
ENSCAFT00000066012.1	Canis_familiaris.CanFam3.1.ncrna	-4.53647	-2.6E-06	4.32E-05
ENSCAFT00000066023.1	Canis_familiaris.CanFam3.1.ncrna	-5.74956	-8.9E-06	2.44E-11
ENSCAFT00000066080.1	Canis_familiaris.CanFam3.1.ncrna	-4.39359	-5.9E-06	5.89E-06
ENSCAFT00000066082.1	Canis_familiaris.CanFam3.1.ncrna	-3.69361	-2.6E-05	4.45E-05
ENSCAFT00000066114.1	Canis_familiaris.CanFam3.1.ncrna	-3.86161	-5.2E-06	0.0017
ENSCAFT00000066168.1	Canis_familiaris.CanFam3.1.ncrna	-3.62264	-2.5E-06	5.9E-05
ENSCAFT00000066316.1	Canis_familiaris.CanFam3.1.ncrna	-8.8328	-1.5E-05	4.91E-15
ENSCAFT00000066352.1	Canis_familiaris.CanFam3.1.ncrna	-10.0462	-2E-05	1.4E-18
ENSCAFT00000066406.1	Canis_familiaris.CanFam3.1.ncrna	-4.49989	-1.8E-06	0.000372
ENSCAFT00000066439.1	Canis_familiaris.CanFam3.1.ncrna	-13.3017	-3.4E-05	2.65E-25
ENSCAFT00000066445.1	Canis_familiaris.CanFam3.1.ncrna	-7.79584	-7.1E-06	1.16E-12
ENSCAFT00000066529.1	Canis_familiaris.CanFam3.1.ncrna	-5.85435	-9.2E-06	8.76E-12
ENSCAFT00000066601.1	Canis_familiaris.CanFam3.1.ncrna	-7.00345	-1.4E-05	2.84E-13
ENSCAFT00000066656.1	Canis_familiaris.CanFam3.1.ncrna	-2.84189	-5.6E-06	0.002573
ENSCAFT00000066663.1	Canis_familiaris.CanFam3.1.ncrna	-7.20681	-6.4E-06	8.61E-12
ENSCAFT00000066760.1	Canis_familiaris.CanFam3.1.ncrna	-6.13597	-1.3E-05	3.91E-12
ENSCAFT00000066858.1	Canis_familiaris.CanFam3.1.ncrna	-2.50495	-1.7E-06	0.036177
ENSCAFT00000066867.1	Canis_familiaris.CanFam3.1.ncrna	-2.88548	-1.9E-06	0.012962
ENSCAFT00000066910.1	Canis_familiaris.CanFam3.1.ncrna	-3.16132	-1.6E-06	0.004721
ENSCAFT00000066943.1	Canis_familiaris.CanFam3.1.ncrna	-9.21948	-2.3E-05	4.42E-18
ENSCAFT00000067006.1	Canis_familiaris.CanFam3.1.ncrna	-4.90216	-1.2E-05	9.47E-08
ENSCAFT00000067164.1	Canis_familiaris.CanFam3.1.ncrna	-6.66953	-4.1E-05	1.85E-07
ENSCAFT00000067182.1	Canis_familiaris.CanFam3.1.ncrna	-5.00588	-1.4E-06	9.39E-05
ENSCAFT00000067186.1	Canis_familiaris.CanFam3.1.ncrna	-7.51301	-1.1E-05	6.04E-13
ENSCAFT00000067221.1	Canis_familiaris.CanFam3.1.ncrna	-5.36386	-1.4E-05	3.04E-09
ENSCAFT00000067240.1	Canis_familiaris.CanFam3.1.ncrna	-4.62738	-8.9E-07	0.001547
ENSCAFT00000067271.1	Canis_familiaris.CanFam3.1.ncrna	-2.29365	-5.5E-06	0.017465
ENSCAFT00000067455.1	Canis_familiaris.CanFam3.1.ncrna	-3.69624	-2.6E-05	8.78E-08
ENSCAFT00000067569.1	Canis_familiaris.CanFam3.1.ncrna	-13.1975	-3.3E-06	6.37E-10
ENSCAFT00000067835.1	Canis_familiaris.CanFam3.1.ncrna	-5.72268	-1.5E-05	3.08E-12
ENSCAFT00000067989.1	Canis_familiaris.CanFam3.1.ncrna	-3.22105	-1.9E-06	0.001974
ENSCAFT00000067997.1	Canis_familiaris.CanFam3.1.ncrna	-4.22295	-5.1E-06	1.12E-07
ENSCAFT00000068052.1	Canis_familiaris.CanFam3.1.ncrna	-3.34717	-1.6E-06	0.001946
ENSCAFT00000068292.1	Canis_familiaris.CanFam3.1.ncrna	-3.99639	-3.5E-06	3.42E-06
ENSCAFT00000068305.1	Canis_familiaris.CanFam3.1.ncrna	-3.1405	-1.2E-06	0.006536
ENSCAFT00000068333.1	Canis_familiaris.CanFam3.1.ncrna	-7.26965	-1.7E-05	4.51E-15
ENSCAFT00000068483.1	Canis_familiaris.CanFam3.1.ncrna	-9.98761	-3.4E-05	9.22E-22
ENSCAFT00000068604.1	Canis_familiaris.CanFam3.1.ncrna	-6.88949	-6.4E-06	5.51E-08
ENSCAFT00000068614.1	Canis_familiaris.CanFam3.1.ncrna	-6.84956	-4.7E-07	0.006895
ENSCAFT00000068663.1	Canis_familiaris.CanFam3.1.ncrna	-3.35817	-1.8E-06	0.003188
ENSCAFT00000068679.1	Canis_familiaris.CanFam3.1.ncrna	-6.045	-1.1E-05	4.75E-12
ENSCAFT00000068984.1	Canis_familiaris.CanFam3.1.ncrna	-4.65145	-6.6E-06	1.34E-08
ENSCAFT00000069033.1	Canis_familiaris.CanFam3.1.ncrna	-3.45546	-3.6E-06	0.004576
ENSCAFT00000069072.1	Canis_familiaris.CanFam3.1.ncrna	-6.22664	-1.3E-05	2.34E-14
ENSCAFT00000069077.1	Canis_familiaris.CanFam3.1.ncrna	-3.16146	-1.7E-06	0.003284
ENSCAFT00000069084.1	Canis_familiaris.CanFam3.1.ncrna	-5.40138	-5.8E-07	0.029806
ENSCAFT00000069093.1	Canis_familiaris.CanFam3.1.ncrna	-7.7087	-1E-05	1.56E-13
ENSCAFT00000069106.1	Canis_familiaris.CanFam3.1.ncrna	-3.18817	-1.7E-05	6.67E-05
ENSCAFT00000069113.1	Canis_familiaris.CanFam3.1.ncrna	-5.72767	-5.7E-06	1.78E-08
ENSCAFT00000069137.1	Canis_familiaris.CanFam3.1.ncrna	-9.36086	-1.8E-05	5.93E-14
ENSCAFT00000069311.1	Canis_familiaris.CanFam3.1.ncrna	-3.77675	-4.5E-06	4.95E-06
ENSCAFT00000069321.1	Canis_familiaris.CanFam3.1.ncrna	-3.71413	-1E-06	0.007967

ENSCAFT00000069336.1	Canis_familiaris.CanFam3.1.ncrna	-2.09576	-2.7E-06	0.034868
ENSCAFT00000069436.1	Canis_familiaris.CanFam3.1.ncrna	-15.2427	-8.1E-07	0.000331
ENSCAFT00000069659.1	Canis_familiaris.CanFam3.1.ncrna	-9.76335	-2.3E-05	3.11E-17
ENSCAFT00000069782.1	Canis_familiaris.CanFam3.1.ncrna	-8.26148	-1.1E-06	1.63E-05
ENSCAFT00000069813.1	Canis_familiaris.CanFam3.1.ncrna	-5.07082	-1.7E-06	2.15E-05
ENSCAFT00000069836.1	Canis_familiaris.CanFam3.1.ncrna	-4.24827	-5.2E-06	1.69E-07
ENSCAFT00000069926.1	Canis_familiaris.CanFam3.1.ncrna	-5.81506	-1.6E-06	7.97E-06
ENSCAFT00000070083.1	Canis_familiaris.CanFam3.1.ncrna	-12.3146	-3.4E-05	8.52E-24
ENSCAFT00000070118.1	Canis_familiaris.CanFam3.1.ncrna	-2.51414	-2.7E-06	0.01552
ENSCAFT00000070127.1	Canis_familiaris.CanFam3.1.ncrna	-6.33834	-1.1E-06	0.000381
ENSCAFT00000070140.1	Canis_familiaris.CanFam3.1.ncrna	-4.43108	-7.5E-06	1.4E-08
ENSCAFT00000070199.1	Canis_familiaris.CanFam3.1.ncrna	-8.67526	-1.5E-05	3.49E-17
ENSCAFT00000070277.1	Canis_familiaris.CanFam3.1.ncrna	-6.85648	-1.2E-05	1.64E-13
ENSCAFT00000070306.1	Canis_familiaris.CanFam3.1.ncrna	-6.50129	-7.4E-06	7.47E-09
ENSCAFT00000070338.1	Canis_familiaris.CanFam3.1.ncrna	-8.29811	-1.8E-06	8.58E-08
ENSCAFT00000070461.1	Canis_familiaris.CanFam3.1.ncrna	-4.34929	-1.4E-05	3.35E-08
ENSCAFT00000070525.1	Canis_familiaris.CanFam3.1.ncrna	-10.6496	-1.5E-06	1.42E-06
ENSCAFT00000070636.1	Canis_familiaris.CanFam3.1.ncrna	-3.22224	-2.5E-06	0.000252
ENSCAFT00000070840.1	Canis_familiaris.CanFam3.1.ncrna	-2.9153	-5.6E-06	0.000787
ENSCAFT00000070862.1	Canis_familiaris.CanFam3.1.ncrna	-7.10295	-4.9E-07	0.008063
ENSCAFT00000070899.1	Canis_familiaris.CanFam3.1.ncrna	-7.2295	-7.1E-06	8.58E-11
ENSCAFT00000070909.1	Canis_familiaris.CanFam3.1.ncrna	-3.43489	-7.5E-07	0.043305
ENSCAFT00000071012.1	Canis_familiaris.CanFam3.1.ncrna	-4.59019	-1.9E-06	0.000144
ENSCAFT00000071086.1	Canis_familiaris.CanFam3.1.ncrna	-3.38638	-3.3E-06	0.001036
ENSCAFT00000071132.1	Canis_familiaris.CanFam3.1.ncrna	-5.80697	-5.4E-06	3.53E-10
ENSCAFT00000071141.1	Canis_familiaris.CanFam3.1.ncrna	-3.267	-1.7E-06	0.000632
ENSCAFT00000071248.1	Canis_familiaris.CanFam3.1.ncrna	-3.57224	-1.1E-06	0.00831
ENSCAFT00000071289.1	Canis_familiaris.CanFam3.1.ncrna	-3.77306	-3.6E-06	1.25E-05
ENSCAFT00000071291.1	Canis_familiaris.CanFam3.1.ncrna	-3.09771	-3.3E-06	0.000479
ENSCAFT00000071307.1	Canis_familiaris.CanFam3.1.ncrna	-2.71115	-1.5E-06	0.014365
ENSCAFT00000071329.1	Canis_familiaris.CanFam3.1.ncrna	-4.09721	-1.9E-06	0.002326
ENSCAFT00000071366.1	Canis_familiaris.CanFam3.1.ncrna	-4.07251	-1.4E-06	0.00226
ENSCAFT00000071379.1	Canis_familiaris.CanFam3.1.ncrna	-3.65616	-1.5E-06	0.008028
ENSCAFT00000071382.1	Canis_familiaris.CanFam3.1.ncrna	-4.71671	-4E-06	3.7E-08
ENSCAFT00000071438.1	Canis_familiaris.CanFam3.1.ncrna	-12.4405	-1.5E-05	8.37E-20
ENSCAFT00000071565.1	Canis_familiaris.CanFam3.1.ncrna	-4.68608	-8.6E-07	0.00742
ENSCAFT00000071568.1	Canis_familiaris.CanFam3.1.ncrna	-4.56975	-9.5E-06	2.2E-08
ENSCAFT00000071570.1	Canis_familiaris.CanFam3.1.ncrna	-4.67605	-2.3E-06	0.00011
ENSCAFT00000071676.1	Canis_familiaris.CanFam3.1.ncrna	-3.34488	-1.8E-06	0.000986
ENSCAFT00000071698.1	Canis_familiaris.CanFam3.1.ncrna	-36.2141	-0.00019	8.01E-41
ENSCAFT00000071711.1	Canis_familiaris.CanFam3.1.ncrna	-7.94789	-1.1E-05	8.15E-13
ENSCAFT00000071764.1	Canis_familiaris.CanFam3.1.ncrna	-3.21903	-1.6E-06	0.005498
ENSCAFT00000071774.1	Canis_familiaris.CanFam3.1.ncrna	-7.13526	-1.4E-05	6.92E-14
ENSCAFT00000071810.1	Canis_familiaris.CanFam3.1.ncrna	-4.53223	-2.7E-05	1.24E-07
ENSCAFT00000071856.1	Canis_familiaris.CanFam3.1.ncrna	-7.21928	-8.7E-06	6.66E-12
ENSCAFT00000071980.1	Canis_familiaris.CanFam3.1.ncrna	-3.8795	-8.8E-07	0.009815
ENSCAFT00000072054.1	Canis_familiaris.CanFam3.1.ncrna	-4.16281	-9.8E-06	3.02E-08
ENSCAFT00000072151.1	Canis_familiaris.CanFam3.1.ncrna	-2.64396	-1.5E-05	0.005794
ENSCAFT00000072186.1	Canis_familiaris.CanFam3.1.ncrna	-2.92954	-9.5E-07	0.020433
ENSCAFT00000072414.1	Canis_familiaris.CanFam3.1.ncrna	-3.02211	-1.2E-06	0.024456
ENSCAFT00000072426.1	Canis_familiaris.CanFam3.1.ncrna	-39.1502	-1.2E-06	1.22E-07
ENSCAFT00000072447.1	Canis_familiaris.CanFam3.1.ncrna	-4.19032	-8.7E-06	6.82E-06
ENSCAFT00000072508.1	Canis_familiaris.CanFam3.1.ncrna	-5.55064	-9.4E-07	0.000918
ENSCAFT00000072509.1	Canis_familiaris.CanFam3.1.ncrna	-3.80576	-3.3E-06	0.000365
ENSCAFT00000072522.1	Canis_familiaris.CanFam3.1.ncrna	-4.26178	-5.3E-06	9.72E-06

ENSCAFT00000072556.1	Canis_familiaris.CanFam3.1.ncrna	-5.64424	-2.2E-06	3.95E-06
ENSCAFT00000072728.1	Canis_familiaris.CanFam3.1.ncrna	-2.25849	-2.7E-06	0.024843
ENSCAFT00000072733.1	Canis_familiaris.CanFam3.1.ncrna	-10.4905	-1.5E-05	2.21E-16
ENSCAFT00000072743.1	Canis_familiaris.CanFam3.1.ncrna	-4.46296	-8E-07	0.004505
ENSCAFT00000072744.1	Canis_familiaris.CanFam3.1.ncrna	-6.31112	-1.9E-05	8.59E-15
ENSCAFT00000072793.1	Canis_familiaris.CanFam3.1.ncrna	-3.11966	-1.3E-06	0.010229
ENSCAFT00000072831.1	Canis_familiaris.CanFam3.1.ncrna	-3.92005	-8.1E-06	1.29E-05
ENSCAFT00000072980.1	Canis_familiaris.CanFam3.1.ncrna	-160.545	-1.1E-06	3.3E-08
ENSCAFT00000073137.1	Canis_familiaris.CanFam3.1.ncrna	-2.17874	-2.6E-06	0.019644
ENSCAFT00000073138.1	Canis_familiaris.CanFam3.1.ncrna	-7.55314	-2.3E-05	1.66E-16
ENSCAFT00000073194.1	Canis_familiaris.CanFam3.1.ncrna	-3.60712	-1.3E-06	0.004938
ENSCAFT00000073327.1	Canis_familiaris.CanFam3.1.ncrna	-4.71846	-1.8E-06	3.14E-05
ENSCAFT00000073431.1	Canis_familiaris.CanFam3.1.ncrna	-5.39061	-5.7E-07	0.016818
ENSCAFT00000073472.1	Canis_familiaris.CanFam3.1.ncrna	-5.18593	-1.4E-05	5.74E-12
ENSCAFT00000073545.1	Canis_familiaris.CanFam3.1.ncrna	-8.22667	-2.2E-05	1.25E-16
ENSCAFT00000073631.1	Canis_familiaris.CanFam3.1.ncrna	-19.3401	-5.7E-07	0.000229
ENSCAFT00000073636.1	Canis_familiaris.CanFam3.1.ncrna	-8.28372	-2.6E-06	1.81E-08
ENSCAFT00000073658.1	Canis_familiaris.CanFam3.1.ncrna	-2.70288	-2.5E-06	0.018935
ENSCAFT00000073684.1	Canis_familiaris.CanFam3.1.ncrna	-2.85522	-1.9E-06	0.004338
ENSCAFT00000073701.1	Canis_familiaris.CanFam3.1.ncrna	-12.0898	-2.2E-06	1.31E-09
ENSCAFT00000073745.1	Canis_familiaris.CanFam3.1.ncrna	-3.53425	-1E-06	0.005852
ENSCAFT00000073776.1	Canis_familiaris.CanFam3.1.ncrna	-6.69394	-1.4E-05	4.19E-13
ENSCAFT00000073780.1	Canis_familiaris.CanFam3.1.ncrna	-4.00312	-2.2E-05	1.83E-06
ENSCAFT00000073790.1	Canis_familiaris.CanFam3.1.ncrna	-3.88353	-1.8E-06	0.001293
ENSCAFT00000073907.1	Canis_familiaris.CanFam3.1.ncrna	-3.42193	-1.5E-05	1.87E-06
ENSCAFT00000073969.1	Canis_familiaris.CanFam3.1.ncrna	-9.21576	-1.5E-05	2.15E-13
ENSCAFT00000073998.1	Canis_familiaris.CanFam3.1.ncrna	-4.86605	-2.1E-06	1.17E-05
ENSCAFT00000074013.1	Canis_familiaris.CanFam3.1.ncrna	-5.33346	-1.8E-06	0.000371
ENSCAFT00000074099.1	Canis_familiaris.CanFam3.1.ncrna	-4.24038	-3E-06	0.000234
ENSCAFT00000074193.1	Canis_familiaris.CanFam3.1.ncrna	-4.14568	-3.3E-06	5.61E-05
ENSCAFT00000074197.1	Canis_familiaris.CanFam3.1.ncrna	-3.0102	-1.5E-06	0.002905
ENSCAFT00000074311.1	Canis_familiaris.CanFam3.1.ncrna	-7.03135	-1.3E-05	2E-14
ENSCAFT00000074355.1	Canis_familiaris.CanFam3.1.ncrna	-4.00221	-3.5E-06	2.65E-05
ENSCAFT00000074453.1	Canis_familiaris.CanFam3.1.ncrna	-3.11314	-1.6E-06	0.017665
ENSCAFT00000074571.1	Canis_familiaris.CanFam3.1.ncrna	-4.35494	-4.8E-06	1.08E-06
ENSCAFT00000074593.1	Canis_familiaris.CanFam3.1.ncrna	-2.49038	-3.8E-06	0.001861
ENSCAFT00000074780.1	Canis_familiaris.CanFam3.1.ncrna	-9.21171	-1.1E-05	2.6E-15
ENSCAFT00000074885.1	Canis_familiaris.CanFam3.1.ncrna	-3.29454	-6.4E-06	5.55E-05
ENSCAFT00000074946.1	Canis_familiaris.CanFam3.1.ncrna	-4.40161	-7.8E-07	0.004214
ENSCAFT00000075002.1	Canis_familiaris.CanFam3.1.ncrna	-8.511	-4.7E-06	6.94E-12
ENSCAFT00000075078.1	Canis_familiaris.CanFam3.1.ncrna	-8.01297	-7.4E-07	0.000874
ENSCAFT00000075134.1	Canis_familiaris.CanFam3.1.ncrna	-13.7369	-7E-07	0.000199
ENSCAFT00000075186.1	Canis_familiaris.CanFam3.1.ncrna	-3.21386	-7.5E-07	0.043866
ENSCAFT00000075504.1	Canis_familiaris.CanFam3.1.ncrna	-5.54496	-5.8E-06	3.32E-05
ENSCAFT00000075520.1	Canis_familiaris.CanFam3.1.ncrna	-2.85436	-1.8E-06	0.005402
ENSCAFT00000075577.1	Canis_familiaris.CanFam3.1.ncrna	-10.5632	-2.5E-05	1.15E-21
ENSCAFT00000075645.1	Canis_familiaris.CanFam3.1.ncrna	-2.53163	-4.2E-06	0.008024
ENSCAFT00000075661.1	Canis_familiaris.CanFam3.1.ncrna	-5.19852	-1.1E-06	0.013232
ENSCAFT00000075855.1	Canis_familiaris.CanFam3.1.ncrna	-5.83825	-1.4E-06	0.00053
ENSCAFT00000075895.1	Canis_familiaris.CanFam3.1.ncrna	-9.40999	-1.9E-06	2.42E-08
ENSCAFT00000076060.1	Canis_familiaris.CanFam3.1.ncrna	-4.37636	-2.8E-05	4.09E-09
ENSCAFT00000076362.1	Canis_familiaris.CanFam3.1.ncrna	-2.0831	-2.5E-06	0.048193
ENSCAFT00000076408.1	Canis_familiaris.CanFam3.1.ncrna	-5.97051	-5.5E-06	7.69E-09
ENSCAFT00000076467.1	Canis_familiaris.CanFam3.1.ncrna	-3.6833	-5.1E-06	1.12E-05
ENSCAFT00000076516.1	Canis_familiaris.CanFam3.1.ncrna	-3.19655	-7.5E-06	4.42E-06

ENSCAFT00000076559.1	Canis_familiaris.CanFam3.1.ncrna	-3.66438	-1.3E-06	0.017141
ENSCAFT00000076581.1	Canis_familiaris.CanFam3.1.ncrna	-2.78391	-1.2E-06	0.017236
ENSCAFT00000076599.1	Canis_familiaris.CanFam3.1.ncrna	-10.6379	-2E-05	1.38E-18
ENSCAFT00000076661.1	Canis_familiaris.CanFam3.1.ncrna	-5.90327	-8.6E-07	0.000816
ENSCAFT00000076684.1	Canis_familiaris.CanFam3.1.ncrna	-6.77926	-3.6E-06	1.2E-07
ENSCAFT00000076755.1	Canis_familiaris.CanFam3.1.ncrna	-4.61983	-2.9E-06	9.59E-06
ENSCAFT00000076871.1	Canis_familiaris.CanFam3.1.ncrna	-2.60044	-2.6E-06	0.027926
ENSCAFT00000076937.1	Canis_familiaris.CanFam3.1.ncrna	-3.25323	-8E-07	0.035092
ENSCAFT00000077006.1	Canis_familiaris.CanFam3.1.ncrna	-3.57688	-8.8E-06	5.35E-05
ENSCAFT00000077297.1	Canis_familiaris.CanFam3.1.ncrna	-8.39028	-4.6E-05	3.2E-18
ENSCAFT00000077337.1	Canis_familiaris.CanFam3.1.ncrna	-3.01933	-1E-06	0.033562
ENSCAFT00000077398.1	Canis_familiaris.CanFam3.1.ncrna	-8.69267	-1.2E-06	7.09E-05
ENSCAFT00000077410.1	Canis_familiaris.CanFam3.1.ncrna	-6.17564	-6.9E-06	1.75E-10
ENSCAFT00000077489.1	Canis_familiaris.CanFam3.1.ncrna	-6.0884	-1.3E-06	4.52E-05
ENSCAFT00000077586.1	Canis_familiaris.CanFam3.1.ncrna	-12.3457	-6.3E-07	0.000718
ENSCAFT00000077671.1	Canis_familiaris.CanFam3.1.ncrna	-4.85017	-1.6E-06	7.4E-05
ENSCAFT00000077850.1	Canis_familiaris.CanFam3.1.ncrna	-7.02591	-1.2E-05	3.45E-13
ENSCAFT00000077851.1	Canis_familiaris.CanFam3.1.ncrna	-6.49991	-6.5E-06	2.02E-09
ENSCAFT00000077971.1	Canis_familiaris.CanFam3.1.ncrna	-5.62203	-3E-06	3.49E-07
ENSCAFT00000078029.1	Canis_familiaris.CanFam3.1.ncrna	-9.20285	-4.3E-05	8.28E-19
ENSCAFT00000078047.1	Canis_familiaris.CanFam3.1.ncrna	-10.1435	-5.8E-06	4.39E-13
ENSCAFT00000078058.1	Canis_familiaris.CanFam3.1.ncrna	-2.72494	-1.9E-06	0.003544
ENSCAFT00000078066.1	Canis_familiaris.CanFam3.1.ncrna	-2.88275	-2.3E-06	0.002994
ENSCAFT00000078162.1	Canis_familiaris.CanFam3.1.ncrna	-8.78652	-1.4E-05	1.02E-16
ENSCAFT00000078337.1	Canis_familiaris.CanFam3.1.ncrna	-5.7711	-9.4E-07	0.001475
ENSCAFT00000078399.1	Canis_familiaris.CanFam3.1.ncrna	-12.2789	-4.2E-06	1.41E-12
ENSCAFT00000078415.1	Canis_familiaris.CanFam3.1.ncrna	-6.69165	-1.4E-05	6.25E-15
ENSCAFT00000078430.1	Canis_familiaris.CanFam3.1.ncrna	-3.26661	-1.4E-06	0.015079
ENSCAFT00000078497.1	Canis_familiaris.CanFam3.1.ncrna	-11.7829	-3.7E-05	8.1E-23
ENSCAFT00000078524.1	Canis_familiaris.CanFam3.1.ncrna	-3.73302	-1.3E-06	0.003661
ENSCAFT00000078532.1	Canis_familiaris.CanFam3.1.ncrna	-7.57186	-1.3E-06	5.97E-06
ENSCAFT00000078849.1	Canis_familiaris.CanFam3.1.ncrna	-4.02318	-2.7E-06	9.78E-05
ENSCAFT00000078859.1	Canis_familiaris.CanFam3.1.ncrna	-7.30168	-5.9E-05	4.55E-18
ENSCAFT00000078888.1	Canis_familiaris.CanFam3.1.ncrna	-4.56098	-2.1E-06	0.00072
ENSCAFT00000078890.1	Canis_familiaris.CanFam3.1.ncrna	-3.29989	-8.3E-07	0.043709
ENSCAFT00000078900.1	Canis_familiaris.CanFam3.1.ncrna	-10.4583	-2.6E-06	8E-10
ENSCAFT00000078991.1	Canis_familiaris.CanFam3.1.ncrna	-10.8458	-7E-06	4.09E-15
ENSCAFT00000079102.1	Canis_familiaris.CanFam3.1.ncrna	-2.92663	-2.2E-06	0.001365
ENSCAFT00000079217.1	Canis_familiaris.CanFam3.1.ncrna	-12.0117	-2.4E-05	1.79E-21
ENSCAFT00000079247.1	Canis_familiaris.CanFam3.1.ncrna	-2.66036	-1E-06	0.045931
ENSCAFT00000079253.1	Canis_familiaris.CanFam3.1.ncrna	-8.22518	-1.1E-05	5.02E-16
ENSCAFT00000079261.1	Canis_familiaris.CanFam3.1.ncrna	-3.99442	-1.7E-05	1.75E-07
ENSCAFT00000079262.1	Canis_familiaris.CanFam3.1.ncrna	-6.37244	-7E-07	0.002735
ENSCAFT00000079471.1	Canis_familiaris.CanFam3.1.ncrna	-4.05071	-1.9E-06	0.00015
ENSCAFT00000079534.1	Canis_familiaris.CanFam3.1.ncrna	-3.25522	-1.4E-06	0.011052
ENSCAFT00000079743.1	Canis_familiaris.CanFam3.1.ncrna	-3.02983	-9.6E-07	0.036243
ENSCAFT00000079744.1	Canis_familiaris.CanFam3.1.ncrna	-2.34648	-4E-06	0.002917
ENSCAFT00000079796.1	Canis_familiaris.CanFam3.1.ncrna	-3.11684	-4.2E-06	0.002129
ENSCAFT00000079861.1	Canis_familiaris.CanFam3.1.ncrna	-8.36879	-5.1E-06	9.54E-11
ENSCAFT00000080228.1	Canis_familiaris.CanFam3.1.ncrna	-3.87825	-5E-07	0.045914
ENSCAFT00000080385.1	Canis_familiaris.CanFam3.1.ncrna	-6.85826	-1.3E-05	1.5E-14
ENSCAFT00000080420.1	Canis_familiaris.CanFam3.1.ncrna	-4.80047	-8.3E-06	1.4E-08
ENSCAFT00000080435.1	Canis_familiaris.CanFam3.1.ncrna	-3.40988	-4.3E-06	0.002553
ENSCAFT00000080530.1	Canis_familiaris.CanFam3.1.ncrna	-8.31461	-2E-05	3.44E-17
ENSCAFT00000080638.1	Canis_familiaris.CanFam3.1.ncrna	-11.8474	-1.7E-05	1.04E-18

ENSCAFT00000080769.1	Canis_familiaris.CanFam3.1.ncrna	-2.99008	-8.3E-07	0.040505
ENSCAFT00000080778.1	Canis_familiaris.CanFam3.1.ncrna	-8.07164	-5.4E-06	1.98E-10
ENSCAFT00000080828.1	Canis_familiaris.CanFam3.1.ncrna	-5.18212	-5.4E-07	0.029845
ENSCAFT00000080836.1	Canis_familiaris.CanFam3.1.ncrna	-2.74068	-3.6E-06	0.001087
ENSCAFT00000080855.1	Canis_familiaris.CanFam3.1.ncrna	-7.37116	-1.4E-06	1.64E-05
ENSCAFT00000080971.1	Canis_familiaris.CanFam3.1.ncrna	-2.39658	-2.2E-06	0.009261
ENSCAFT00000080974.1	Canis_familiaris.CanFam3.1.ncrna	-8.15527	-7.7E-07	0.000724
ENSCAFT00000080987.1	Canis_familiaris.CanFam3.1.ncrna	-4.75289	-1.2E-06	0.00069
ENSCAFT00000081080.1	Canis_familiaris.CanFam3.1.ncrna	-4.67669	-2.7E-06	5.28E-06
ENSCAFT00000081103.1	Canis_familiaris.CanFam3.1.ncrna	-3.46393	-1.7E-05	1.2E-06
ENSCAFT00000081187.1	Canis_familiaris.CanFam3.1.ncrna	-7.82502	-7.9E-05	3.11E-17
ENSCAFT00000081290.1	Canis_familiaris.CanFam3.1.ncrna	-2.9383	-1.2E-05	1.06E-05
ENSCAFT00000081801.1	Canis_familiaris.CanFam3.1.ncrna	-5.18451	-1.2E-05	4.3E-10
ENSCAFT00000081875.1	Canis_familiaris.CanFam3.1.ncrna	-6.70444	-8.8E-07	0.000702
ENSCAFT00000081961.1	Canis_familiaris.CanFam3.1.ncrna	-9.24076	-1.1E-05	2.4E-16
ENSCAFT00000082184.1	Canis_familiaris.CanFam3.1.ncrna	-3.51497	-1.4E-06	0.007662
ENSCAFT00000082236.1	Canis_familiaris.CanFam3.1.ncrna	-3.62437	-1.6E-06	0.000741
ENSCAFT00000082348.1	Canis_familiaris.CanFam3.1.ncrna	-2.72362	-1.6E-06	0.019104
ENSCAFT00000082357.1	Canis_familiaris.CanFam3.1.ncrna	-3.14869	-2E-06	0.025145
ENSCAFT00000082373.1	Canis_familiaris.CanFam3.1.ncrna	-9.83978	-1.9E-05	8.99E-19
ENSCAFT00000082467.1	Canis_familiaris.CanFam3.1.ncrna	-5.27327	-3.3E-06	1.01E-05
ENSCAFT00000082573.1	Canis_familiaris.CanFam3.1.ncrna	-4.57356	-3E-06	1.42E-06
ENSCAFT00000082604.1	Canis_familiaris.CanFam3.1.ncrna	-2.88305	-8.8E-06	3.75E-05
ENSCAFT00000082665.1	Canis_familiaris.CanFam3.1.ncrna	-3.56182	-1.3E-05	1.75E-05
ENSCAFT00000082671.1	Canis_familiaris.CanFam3.1.ncrna	-9.95286	-2.5E-05	3.84E-19
ENSCAFT00000082896.1	Canis_familiaris.CanFam3.1.ncrna	-6.18413	-1.1E-06	8.92E-05
ENSCAFT00000082936.1	Canis_familiaris.CanFam3.1.ncrna	-9.27954	-4.4E-05	6.5E-19
ENSCAFT00000082979.1	Canis_familiaris.CanFam3.1.ncrna	-9.48932	-2.9E-06	5.2E-06
ENSCAFT00000083054.1	Canis_familiaris.CanFam3.1.ncrna	-7.88725	-1.8E-05	2.11E-17
ENSCAFT00000083081.1	Canis_familiaris.CanFam3.1.ncrna	-6.64626	-1.8E-05	1.7E-11
ENSCAFT00000083394.1	Canis_familiaris.CanFam3.1.ncrna	-3.1442	-9.3E-07	0.020201
ENSCAFT00000083447.1	Canis_familiaris.CanFam3.1.ncrna	-2.86829	-4E-06	0.000864
ENSCAFT00000083520.1	Canis_familiaris.CanFam3.1.ncrna	-2.87703	-2.1E-06	0.002396
ENSCAFT00000083531.1	Canis_familiaris.CanFam3.1.ncrna	-4.96956	-9.9E-07	0.000728
ENSCAFT00000083539.1	Canis_familiaris.CanFam3.1.ncrna	-4.43526	-3.1E-06	1.22E-05
ENSCAFT00000083630.1	Canis_familiaris.CanFam3.1.ncrna	-3.12887	-0.00077	5.52E-08
ENSCAFT00000083740.1	Canis_familiaris.CanFam3.1.ncrna	-5.22458	-6.5E-06	1.59E-06
ENSCAFT00000083799.1	Canis_familiaris.CanFam3.1.ncrna	-3.38596	-6.1E-06	2.05E-05
ENSCAFT00000083978.1	Canis_familiaris.CanFam3.1.ncrna	-7.53667	-6.8E-07	0.001371
ENSCAFT00000083990.1	Canis_familiaris.CanFam3.1.ncrna	-3.29643	-2E-06	0.003025
ENSCAFT00000084019.1	Canis_familiaris.CanFam3.1.ncrna	-8.26547	-1.3E-05	1.35E-15
ENSCAFT00000084134.1	Canis_familiaris.CanFam3.1.ncrna	-6.00275	-5.3E-07	0.021162
ENSCAFT00000084213.1	Canis_familiaris.CanFam3.1.ncrna	-3.88514	-0.00013	3.78E-08
ENSCAFT00000084248.1	Canis_familiaris.CanFam3.1.ncrna	-6.87579	-1.4E-05	4.15E-13
ENSCAFT00000084276.1	Canis_familiaris.CanFam3.1.ncrna	-2.2866	-2E-06	0.030827
ENSCAFT00000084282.1	Canis_familiaris.CanFam3.1.ncrna	-11.7779	-6E-07	0.001066
ENSCAFT00000084417.1	Canis_familiaris.CanFam3.1.ncrna	-5.36524	-4.8E-06	5.17E-07
ENSCAFT00000084481.1	Canis_familiaris.CanFam3.1.ncrna	-2.54356	-1.3E-06	0.020138
ENSCAFT00000084589.1	Canis_familiaris.CanFam3.1.ncrna	-6.55798	-7.4E-06	3.22E-10
ENSCAFT00000084705.1	Canis_familiaris.CanFam3.1.ncrna	-3.75655	-1.6E-06	0.005769
ENSCAFT00000084821.1	Canis_familiaris.CanFam3.1.ncrna	-3.02256	-2.3E-06	0.001242
ENSCAFT00000084861.1	Canis_familiaris.CanFam3.1.ncrna	-3.90072	-2.4E-06	0.003354
ENSCAFT00000084869.1	Canis_familiaris.CanFam3.1.ncrna	-6.12871	-6.1E-06	9.46E-08
ENSCAFT00000084878.1	Canis_familiaris.CanFam3.1.ncrna	-4.12022	-9.5E-07	0.004063
ENSCAFT00000084911.1	Canis_familiaris.CanFam3.1.ncrna	-2.01764	-3.3E-06	0.032708

ENSCAFT00000084965.1	Canis_familiaris.CanFam3.1.ncrna	-5.26835	-8.6E-06	5.64E-09
ENSCAFT00000084978.1	Canis_familiaris.CanFam3.1.ncrna	-3.34675	-1E-06	0.011334
ENSCAFT00000085004.1	Canis_familiaris.CanFam3.1.ncrna	-3.2299	-3.1E-06	0.000594
ENSCAFT00000085056.1	Canis_familiaris.CanFam3.1.ncrna	-3.87827	-3.7E-06	1.48E-06
ENSCAFT00000085238.1	Canis_familiaris.CanFam3.1.ncrna	-19.0267	-1.4E-06	5.94E-08
ENSCAFT00000085241.1	Canis_familiaris.CanFam3.1.ncrna	-9.84448	-1.8E-05	6.34E-16
ENSCAFT00000085248.1	Canis_familiaris.CanFam3.1.ncrna	-3.40225	-7.9E-06	0.004389
ENSCAFT00000085283.1	Canis_familiaris.CanFam3.1.ncrna	-8.69364	-2.1E-05	2.3E-15
ENSCAFT00000085301.1	Canis_familiaris.CanFam3.1.ncrna	-7.22903	-1.6E-05	3.19E-14
ENSCAFT00000085331.1	Canis_familiaris.CanFam3.1.ncrna	-7.21324	-1.6E-05	6.68E-15
ENSCAFT00000085356.1	Canis_familiaris.CanFam3.1.ncrna	-3.13958	-1.7E-05	7.99E-05
ENSCAFT00000085384.1	Canis_familiaris.CanFam3.1.ncrna	-7.78452	-1.2E-06	1.24E-05
ENSCAFT00000085474.1	Canis_familiaris.CanFam3.1.ncrna	-19.7615	-2.5E-06	8.21E-12
ENSCAFT00000085524.1	Canis_familiaris.CanFam3.1.ncrna	-3.57741	-1.1E-06	0.014344
ENSCAFT00000085578.1	Canis_familiaris.CanFam3.1.ncrna	-6.19242	-5.8E-06	1.92E-10
ENSCAFT00000085631.1	Canis_familiaris.CanFam3.1.ncrna	-3.36288	-7.1E-07	0.028648
ENSCAFT00000085683.1	Canis_familiaris.CanFam3.1.ncrna	-9.17145	-4.6E-07	0.010496
ENSCAFT00000085697.1	Canis_familiaris.CanFam3.1.ncrna	-5.05252	-5.4E-06	8.8E-07
ENSCAFT00000085842.1	Canis_familiaris.CanFam3.1.ncrna	-2.31427	-4E-06	0.034957
ENSCAFT00000086136.1	Canis_familiaris.CanFam3.1.ncrna	-8.9788	-9.6E-06	1.01E-13
ENSCAFT00000086141.1	Canis_familiaris.CanFam3.1.ncrna	-4.56732	-4.5E-06	9.11E-08
ENSCAFT00000086171.1	Canis_familiaris.CanFam3.1.ncrna	-3.35001	-1.2E-05	1.48E-05
ENSCAFT00000086219.1	Canis_familiaris.CanFam3.1.ncrna	-2.67996	-1.5E-06	0.014241
ENSCAFT00000086220.1	Canis_familiaris.CanFam3.1.ncrna	-10.1529	-1.4E-06	1.64E-05
ENSCAFT00000086272.1	Canis_familiaris.CanFam3.1.ncrna	-6.23247	-5.1E-06	4.3E-08
ENSCAFT00000086413.1	Canis_familiaris.CanFam3.1.ncrna	-4.52891	-5.3E-06	8.39E-07
ENSCAFT00000086442.1	Canis_familiaris.CanFam3.1.ncrna	-3.63975	-8E-07	0.013211
ENSCAFT00000086468.1	Canis_familiaris.CanFam3.1.ncrna	-4.17803	-4.2E-06	2E-06
ENSCAFT00000086566.1	Canis_familiaris.CanFam3.1.ncrna	-8.82847	-2.6E-05	5.64E-14
ENSCAFT00000086587.1	Canis_familiaris.CanFam3.1.ncrna	-3.61575	-1.2E-05	4.26E-05
ENSCAFT00000086647.1	Canis_familiaris.CanFam3.1.ncrna	-2.84742	-1.1E-06	0.049984
ENSCAFT00000086768.1	Canis_familiaris.CanFam3.1.ncrna	-4.2881	-1.1E-06	0.001447
ENSCAFT00000086779.1	Canis_familiaris.CanFam3.1.ncrna	-5.22554	-1.9E-06	7.57E-06
ENSCAFT00000086830.1	Canis_familiaris.CanFam3.1.ncrna	-2.88343	-0.00071	8.82E-06
ENSCAFT00000086900.1	Canis_familiaris.CanFam3.1.ncrna	-2.31328	-2E-06	0.027903
ENSCAFT00000086925.1	Canis_familiaris.CanFam3.1.ncrna	-3.35794	-3.9E-06	0.001413
ENSCAFT00000086990.1	Canis_familiaris.CanFam3.1.ncrna	-8.70782	-3.2E-05	2.82E-18
ENSCAFT00000087010.1	Canis_familiaris.CanFam3.1.ncrna	-2.74083	-6E-06	0.000274
ENSCAFT00000087018.1	Canis_familiaris.CanFam3.1.ncrna	-3.40174	-8.1E-07	0.036691
ENSCAFT00000087180.1	Canis_familiaris.CanFam3.1.ncrna	-4.32725	-5.3E-06	1.87E-06
ENSCAFT00000087183.1	Canis_familiaris.CanFam3.1.ncrna	-8.92275	-3.9E-06	3.25E-07
ENSCAFT00000087238.1	Canis_familiaris.CanFam3.1.ncrna	-4.00678	-9.9E-06	1.16E-05
ENSCAFT00000087246.1	Canis_familiaris.CanFam3.1.ncrna	-13.62	-3.7E-05	1.55E-25
ENSCAFT00000087261.1	Canis_familiaris.CanFam3.1.ncrna	-123.474	-8.4E-07	4.31E-07
ENSCAFT00000087404.1	Canis_familiaris.CanFam3.1.ncrna	-3.73316	-1E-06	0.003182
ENSCAFT00000087408.1	Canis_familiaris.CanFam3.1.ncrna	-4.44321	-9.5E-07	0.001656
ENSCAFT00000087471.1	Canis_familiaris.CanFam3.1.ncrna	-11.6258	-1.1E-06	3.08E-05
ENSCAFT00000087624.1	Canis_familiaris.CanFam3.1.ncrna	-7.26329	-2.9E-06	1.17E-06
ENSCAFT00000087642.1	Canis_familiaris.CanFam3.1.ncrna	-3.39538	-3.8E-06	0.000804
ENSCAFT00000087679.1	Canis_familiaris.CanFam3.1.ncrna	-3.70262	-6.5E-06	0.003645
ENSCAFT00000087782.1	Canis_familiaris.CanFam3.1.ncrna	-3.80504	-1.3E-06	0.002525
ENSCAFT00000087947.1	Canis_familiaris.CanFam3.1.ncrna	-8.2593	-2.9E-05	2.56E-18
ENSCAFT00000088084.1	Canis_familiaris.CanFam3.1.ncrna	-5.81724	-6.6E-06	1.25E-09
ENSCAFT00000088148.1	Canis_familiaris.CanFam3.1.ncrna	-3.82627	-4.5E-06	1.45E-06
ENSCAFT00000088150.1	Canis_familiaris.CanFam3.1.ncrna	-3.97335	-2.6E-06	1.98E-05

ENSCAFT00000088300.1	Canis_familiaris.CanFam3.1.ncrna	-3.41196	-1.4E-06	0.004494
ENSCAFT00000088410.1	Canis_familiaris.CanFam3.1.ncrna	-5.78899	-1.2E-06	9.78E-05
ENSCAFT00000088507.1	Canis_familiaris.CanFam3.1.ncrna	-3.76246	-1.3E-06	0.000961
ENSCAFT00000088523.1	Canis_familiaris.CanFam3.1.ncrna	-8.80028	-2.2E-05	1.83E-19
ENSCAFT00000088692.1	Canis_familiaris.CanFam3.1.ncrna	-5.52349	-1E-05	3.31E-11
ENSCAFT00000088756.1	Canis_familiaris.CanFam3.1.ncrna	-3.39841	-1.7E-06	0.000724
ENSCAFT00000088853.1	Canis_familiaris.CanFam3.1.ncrna	-3.1642	-8.1E-07	0.023454
ENSCAFT00000089072.1	Canis_familiaris.CanFam3.1.ncrna	-3.52468	-2.7E-06	0.000561
ENSCAFT00000089107.1	Canis_familiaris.CanFam3.1.ncrna	-4.18754	-1.6E-06	0.000585
ENSCAFT00000089108.1	Canis_familiaris.CanFam3.1.ncrna	-7.04075	-2.5E-05	6.02E-15
ENSCAFT00000089158.1	Canis_familiaris.CanFam3.1.ncrna	-3.72999	-2.1E-06	0.001589
ENSCAFT00000089169.1	Canis_familiaris.CanFam3.1.ncrna	-2.32392	-1.7E-06	0.043543
ENSCAFT00000089234.1	Canis_familiaris.CanFam3.1.ncrna	-2.2366	-3.6E-06	0.022035
ENSCAFT00000089255.1	Canis_familiaris.CanFam3.1.ncrna	-2.86589	-1.9E-06	0.0161
ENSCAFT00000089310.1	Canis_familiaris.CanFam3.1.ncrna	-5.88368	-8.7E-07	0.000743
ENSCAFT00000089320.1	Canis_familiaris.CanFam3.1.ncrna	-5.30183	-2.2E-06	3.21E-05
ENSCAFT00000089400.1	Canis_familiaris.CanFam3.1.ncrna	-4.08222	-2.2E-05	6.73E-08
ENSCAFT00000089489.1	Canis_familiaris.CanFam3.1.ncrna	-4.31742	-7.7E-07	0.020563
ENSCAFT00000089584.1	Canis_familiaris.CanFam3.1.ncrna	-6.15682	-1.2E-05	5.59E-11
ENSCAFT00000089691.1	Canis_familiaris.CanFam3.1.ncrna	-3.52164	-1.2E-06	0.008767
ENSCAFT00000089801.1	Canis_familiaris.CanFam3.1.ncrna	-6.7034	-7.4E-07	0.001238
ENSCAFT00000090021.1	Canis_familiaris.CanFam3.1.ncrna	-6.98068	-2.2E-05	4.77E-17
ENSCAFT00000090140.1	Canis_familiaris.CanFam3.1.ncrna	-4.58494	-6.5E-06	2.75E-07
ENSCAFT00000090211.1	Canis_familiaris.CanFam3.1.ncrna	-2.42624	-2.3E-06	0.016118
ENSCAFT00000090300.1	Canis_familiaris.CanFam3.1.ncrna	-2.894	-1.3E-06	0.011539
ENSCAFT00000090314.1	Canis_familiaris.CanFam3.1.ncrna	-3.41978	-9.9E-07	0.011755
ENSCAFT00000090315.1	Canis_familiaris.CanFam3.1.ncrna	-6.40397	-7.7E-06	4.11E-09
ENSCAFT00000090335.1	Canis_familiaris.CanFam3.1.ncrna	-4.78427	-3E-05	3.2E-10
ENSCAFT00000090371.1	Canis_familiaris.CanFam3.1.ncrna	-4.97724	-3.2E-06	2.69E-06
ENSCAFT00000090403.1	Canis_familiaris.CanFam3.1.ncrna	-8.65126	-1.6E-05	6.11E-17
ENSCAFT00000090480.1	Canis_familiaris.CanFam3.1.ncrna	-4.27353	-5.5E-06	3.32E-07
ENSCAFT00000090517.1	Canis_familiaris.CanFam3.1.ncrna	-7.47508	-1.7E-05	2.31E-16
ENSCAFT00000090791.1	Canis_familiaris.CanFam3.1.ncrna	-10.7014	-9.9E-06	1.58E-15
ENSCAFT00000090821.1	Canis_familiaris.CanFam3.1.ncrna	-8.43756	-1.2E-05	1E-13
ENSCAFT00000090859.1	Canis_familiaris.CanFam3.1.ncrna	-7.91459	-2.3E-05	1.35E-18
ENSCAFT00000090872.1	Canis_familiaris.CanFam3.1.ncrna	-4.28661	-2.2E-05	7.69E-09
ENSCAFT00000090961.1	Canis_familiaris.CanFam3.1.ncrna	-5.38547	-5.3E-06	3.02E-09
ENSCAFT00000091176.1	Canis_familiaris.CanFam3.1.ncrna	-5.35769	-1.9E-06	0.000447
ENSCAFT00000091178.1	Canis_familiaris.CanFam3.1.ncrna	-7.47858	-5.6E-06	2.68E-10
ENSCAFT00000091236.1	Canis_familiaris.CanFam3.1.ncrna	-3.94682	-8.4E-07	0.032581
ENSCAFT00000091269.1	Canis_familiaris.CanFam3.1.ncrna	-3.1142	-1.7E-06	0.003046
ENSCAFT00000091371.1	Canis_familiaris.CanFam3.1.ncrna	-6.28478	-7.1E-06	1.76E-10
ENSCAFT00000091444.1	Canis_familiaris.CanFam3.1.ncrna	-4.90671	-4.8E-05	1.69E-10
ENSCAFT00000091467.1	Canis_familiaris.CanFam3.1.ncrna	-9.60065	-2.7E-05	2.4E-19
ENSCAFT00000091530.1	Canis_familiaris.CanFam3.1.ncrna	-7.22427	-1.6E-05	4.29E-15
ENSCAFT00000091770.1	Canis_familiaris.CanFam3.1.ncrna	-4.89485	-1.2E-06	0.001552
ENSCAFT00000091801.1	Canis_familiaris.CanFam3.1.ncrna	-3.22764	-2.9E-06	0.00011
ENSCAFT00000091850.1	Canis_familiaris.CanFam3.1.ncrna	-6.43905	-1.7E-05	7.25E-15
ENSCAFT00000092016.1	Canis_familiaris.CanFam3.1.ncrna	-3.69846	-1.7E-05	1.47E-05
ENSCAFT00000092182.1	Canis_familiaris.CanFam3.1.ncrna	-6.64931	-1.3E-06	3.37E-05
ENSCAFT00000092187.1	Canis_familiaris.CanFam3.1.ncrna	-3.40036	-1.7E-05	1.25E-07
ENSCAFT00000092311.1	Canis_familiaris.CanFam3.1.ncrna	-5.15862	-3.3E-05	1.03E-10
ENSCAFT00000092339.1	Canis_familiaris.CanFam3.1.ncrna	-2.50933	-2.7E-06	0.00925
ENSCAFT00000092421.1	Canis_familiaris.CanFam3.1.ncrna	-4.1705	-6.6E-07	0.030631
ENSCAFT00000092509.1	Canis_familiaris.CanFam3.1.ncrna	-3.19624	-8.7E-07	0.033525

ENSCAFT00000092579.1	Canis_familiaris.CanFam3.1.ncrna	-7.46309	-1.8E-05	1.31E-14
ENSCAFT00000092708.1	Canis_familiaris.CanFam3.1.ncrna	-7.01495	-6.2E-06	9.48E-10
ENSCAFT00000092734.1	Canis_familiaris.CanFam3.1.ncrna	-3.67632	-3.7E-05	3.25E-07
ENSCAFT00000092802.1	Canis_familiaris.CanFam3.1.ncrna	-4.53199	-2.1E-05	1.97E-09
ENSCAFT00000092878.1	Canis_familiaris.CanFam3.1.ncrna	-3.49148	-2.1E-05	0.000266
ENSCAFT00000092923.1	Canis_familiaris.CanFam3.1.ncrna	-7.04278	-2.9E-06	9.27E-08
ENSCAFT00000093106.1	Canis_familiaris.CanFam3.1.ncrna	-2.99538	-3.3E-06	0.003608
ENSCAFT00000093128.1	Canis_familiaris.CanFam3.1.ncrna	-3.17046	-4E-06	0.000273
ENSCAFT00000093129.1	Canis_familiaris.CanFam3.1.ncrna	-3.20149	-3.1E-06	0.001026
ENSCAFT00000093153.1	Canis_familiaris.CanFam3.1.ncrna	-2.35773	-1.6E-05	0.014531
ENSCAFT00000093259.1	Canis_familiaris.CanFam3.1.ncrna	-4.59971	-1.3E-05	8.34E-09
ENSCAFT00000093337.1	Canis_familiaris.CanFam3.1.ncrna	-7.54629	-2.1E-05	6.73E-17
ENSCAFT00000093357.1	Canis_familiaris.CanFam3.1.ncrna	-12.578	-2.7E-05	6.39E-22
ENSCAFT00000093361.1	Canis_familiaris.CanFam3.1.ncrna	-10.6094	-2.9E-05	1.49E-19
ENSCAFT00000093507.1	Canis_familiaris.CanFam3.1.ncrna	-7.36623	-1.2E-05	1.41E-11
ENSCAFT00000093620.1	Canis_familiaris.CanFam3.1.ncrna	-5.23563	-1.5E-06	0.004965
ENSCAFT00000093665.1	Canis_familiaris.CanFam3.1.ncrna	-9.99074	-2.1E-05	4.47E-18
ENSCAFT00000093727.1	Canis_familiaris.CanFam3.1.ncrna	-5.56033	-1.9E-06	2.08E-05
ENSCAFT00000093836.1	Canis_familiaris.CanFam3.1.ncrna	-5.9495	-2.8E-05	1.34E-15
ENSCAFT00000093842.1	Canis_familiaris.CanFam3.1.ncrna	-5.22391	-6.4E-06	1.67E-09
ENSCAFT00000093905.1	Canis_familiaris.CanFam3.1.ncrna	-3.48457	-8.4E-07	0.045988
ENSCAFT00000093936.1	Canis_familiaris.CanFam3.1.ncrna	-4.12951	-9.5E-07	0.006535
ENST00000363283.1	Homo_sapiens.GRCh38.ncrna	-3.14537	-9.9E-07	0.017697
ENST00000364009.1	Homo_sapiens.GRCh38.ncrna	-2.98514	-2.8E-05	1.7E-06
ENST00000364451.1	Homo_sapiens.GRCh38.ncrna	-2.95968	-4.4E-06	0.025007
ENST00000364533.1	Homo_sapiens.GRCh38.ncrna	-3.49284	-1E-05	9.99E-06
ENST00000364558.1	Homo_sapiens.GRCh38.ncrna	-3.59696	-1.2E-06	0.001956
ENST00000365061.1	Homo_sapiens.GRCh38.ncrna	-8.15388	-9.2E-07	5.86E-05
ENST00000365188.1	Homo_sapiens.GRCh38.ncrna	-3.67826	-1.5E-06	0.002381
ENST00000365403.1	Homo_sapiens.GRCh38.ncrna	-6.2222	-2.3E-06	3.71E-06
ENST00000410718.1	Homo_sapiens.GRCh38.ncrna	-12.6217	-6.4E-07	0.000205
ENST00000424968.6	Homo_sapiens.GRCh38.ncrna	-10.9954	-1.3E-06	1.24E-06
ENST00000427501.6	Homo_sapiens.GRCh38.ncrna	-5.33878	-4.5E-07	0.022778
ENST00000431043.2	Homo_sapiens.GRCh38.ncrna	-7.00567	-2.5E-06	4.02E-08
ENST00000445808.3	Homo_sapiens.GRCh38.ncrna	-5.28566	-6.7E-07	0.018523
ENST00000538654.6	Homo_sapiens.GRCh38.ncrna	-6.668	-4.5E-07	0.008772
ENST00000545920.2	Homo_sapiens.GRCh38.ncrna	-4.85456	-4.9E-07	0.013368
ENST00000554988.1	Homo_sapiens.GRCh38.ncrna	-6.43216	-1.3E-06	6.76E-05
ENST00000555918.1	Homo_sapiens.GRCh38.ncrna	-3.73773	-9.5E-07	0.029689
ENST00000563103.1	Homo_sapiens.GRCh38.ncrna	-6.21427	-3.1E-06	6.93E-08
ENST00000568314.1	Homo_sapiens.GRCh38.ncrna	-3.08183	-3.8E-05	2.43E-07
ENST00000580459.1	Homo_sapiens.GRCh38.ncrna	-11.6468	-1.1E-06	7.94E-06
ENST00000581816.1	Homo_sapiens.GRCh38.ncrna	-13.8268	-5.8E-06	8.93E-17
ENST00000581915.5	Homo_sapiens.GRCh38.ncrna	-2.83612	-1.6E-06	0.005063
ENST00000582141.5	Homo_sapiens.GRCh38.ncrna	-12.8166	-6E-06	6.06E-15
ENST00000584239.2	Homo_sapiens.GRCh38.ncrna	-10.7319	-7.9E-07	0.000287
ENST00000588796.2	Homo_sapiens.GRCh38.ncrna	-87.7533	-6E-07	3.95E-05
ENST00000591665.1	Homo_sapiens.GRCh38.ncrna	-6.559	-8.5E-07	0.000261
ENST00000606526.1	Homo_sapiens.GRCh38.ncrna	-2.40896	-2.6E-05	0.001518
ENST00000606950.1	Homo_sapiens.GRCh38.ncrna	-3.24514	-9.1E-06	0.001547
ENST00000607967.1	Homo_sapiens.GRCh38.ncrna	-2.82895	-2.7E-06	0.006258
ENST00000610199.1	Homo_sapiens.GRCh38.ncrna	-4.9208	-3.1E-06	0.007375
ENST00000611128.1	Homo_sapiens.GRCh38.ncrna	-9.55237	-9E-07	3.69E-05
ENST00000617901.1	Homo_sapiens.GRCh38.ncrna	-2.97882	-1.8E-05	0.0003
ENST00000619068.1	Homo_sapiens.GRCh38.ncrna	-5.40904	-6.8E-07	0.007353

ENST00000619225.1	Homo_sapiens.GRCh38.ncrna	-2.49064	-1.5E-06	0.036753
ENST00000636668.1	Homo_sapiens.GRCh38.ncrna	-5.32093	-6.7E-07	0.006957
ENST00000638107.1	Homo_sapiens.GRCh38.ncrna	-8.05769	-3.9E-07	0.013616
ENST00000640307.1	Homo_sapiens.GRCh38.ncrna	-10.7605	-5.5E-07	0.000852
ENST00000641138.1	Homo_sapiens.GRCh38.ncrna	-7.29112	-5.1E-07	0.010496
ENST00000647689.1	Homo_sapiens.GRCh38.ncrna	-15.256	-1.1E-06	3.83E-07
ENST00000648024.1	Homo_sapiens.GRCh38.ncrna	-4.34175	-1.3E-06	0.004296
ENST00000651809.1	Homo_sapiens.GRCh38.ncrna	-4.68315	-3.1E-06	4.66E-06
ENST00000655834.1	Homo_sapiens.GRCh38.ncrna	-9.37333	-2.1E-06	5.05E-08
ENST00000655881.1	Homo_sapiens.GRCh38.ncrna	-10.1987	-2.1E-06	1.29E-08
ENST00000656092.1	Homo_sapiens.GRCh38.ncrna	-5.18871	-5.3E-07	0.015702
ENST00000656240.1	Homo_sapiens.GRCh38.ncrna	-8.93028	-4.5E-07	0.013192
ENST00000656268.1	Homo_sapiens.GRCh38.ncrna	-10.1891	-5.1E-07	0.001927
ENST00000657946.1	Homo_sapiens.GRCh38.ncrna	-12.3429	-8.9E-07	0.000142
ENST00000658871.1	Homo_sapiens.GRCh38.ncrna	-7.36902	-2.6E-06	6.01E-08
ENST00000659056.1	Homo_sapiens.GRCh38.ncrna	-5.54569	-9E-07	0.001261
ENST00000659484.1	Homo_sapiens.GRCh38.ncrna	-7.55965	-2.5E-06	9.92E-08
ENST00000660562.1	Homo_sapiens.GRCh38.ncrna	-2.66936	-2.3E-06	0.029035
ENST00000660580.1	Homo_sapiens.GRCh38.ncrna	-10.4047	-2.1E-06	1.37E-08
ENST00000661360.1	Homo_sapiens.GRCh38.ncrna	-9.60467	-2.1E-06	2.78E-08
ENST00000661408.1	Homo_sapiens.GRCh38.ncrna	-2.32675	-0.00228	0.004944
ENST00000662403.1	Homo_sapiens.GRCh38.ncrna	-5.46713	-1.3E-06	0.00072
ENST00000663073.1	Homo_sapiens.GRCh38.ncrna	-6.62773	-2.5E-06	2.1E-07
ENST00000663133.1	Homo_sapiens.GRCh38.ncrna	-10.4598	-2.1E-06	9.73E-09
ENST00000664092.1	Homo_sapiens.GRCh38.ncrna	-4.56359	-1.2E-06	0.000565
ENST00000664449.1	Homo_sapiens.GRCh38.ncrna	-7.51345	-2.1E-06	2.65E-07
ENST00000666341.1	Homo_sapiens.GRCh38.ncrna	-9.76902	-1.4E-06	5.22E-06
ENST00000666912.1	Homo_sapiens.GRCh38.ncrna	-6.05313	-2.4E-06	9.64E-07
ENST00000667289.1	Homo_sapiens.GRCh38.ncrna	-6.27116	-2.4E-06	3.04E-07
ENST00000667693.1	Homo_sapiens.GRCh38.ncrna	-6.03355	-5.3E-07	0.006883
ENST00000668297.1	Homo_sapiens.GRCh38.ncrna	-4.96535	-1.2E-06	0.0002
ENST00000668505.1	Homo_sapiens.GRCh38.ncrna	-5.95884	-2.4E-06	4.82E-07
ENST00000669413.1	Homo_sapiens.GRCh38.ncrna	-7.16825	-4.9E-07	0.004933

Ch.2 : Differentially expressed up-regulated ncRNAs (except miRNA) between LMeC normoxic and hypoxic cell lines.

Small RNA - Name	Small RNA - Resource	Fold change	Weighted difference	FDR p
ENSCAFT00000032578.1	Canis_familiaris.CanFam3.1.ncrna	2.265910152	0.001839387	1.84141E-96
ENSCAFT00000032698.1	Canis_familiaris.CanFam3.1.ncrna	5.493330993	1.31775E-05	1.49884E-49
ENSCAFT00000032824.1	Canis_familiaris.CanFam3.1.ncrna	3.353706938	5.82241E-06	4.52676E-21
ENSCAFT00000032966.1	Canis_familiaris.CanFam3.1.ncrna	2.274885399	0.000243555	8.43647E-62
ENSCAFT00000032979.1	Canis_familiaris.CanFam3.1.ncrna	2.512403652	1.63989E-06	0.001102722
ENSCAFT00000032993.1	Canis_familiaris.CanFam3.1.ncrna	2.85557892	6.44423E-06	3.1487E-20
ENSCAFT00000033055.1	Canis_familiaris.CanFam3.1.ncrna	2.922768811	0.000256015	4.39941E-27
ENSCAFT00000033175.1	Canis_familiaris.CanFam3.1.ncrna	2.17232519	1.01616E-05	2.94932E-07
ENSCAFT00000033217.1	Canis_familiaris.CanFam3.1.ncrna	2.255996308	2.58534E-06	1.48161E-06
ENSCAFT00000033230.1	Canis_familiaris.CanFam3.1.ncrna	2.603701171	1.07407E-06	0.004093227
ENSCAFT00000033243.1	Canis_familiaris.CanFam3.1.ncrna	2.144121042	4.01068E-06	0.000221487
ENSCAFT00000033436.1	Canis_familiaris.CanFam3.1.ncrna	2.504768359	2.58804E-06	7.82289E-05
ENSCAFT00000033466.1	Canis_familiaris.CanFam3.1.ncrna	6.738419591	0.000984162	1.723E-133
ENSCAFT00000033483.1	Canis_familiaris.CanFam3.1.ncrna	2.032492742	1.74985E-05	1.47663E-21
ENSCAFT00000033642.1	Canis_familiaris.CanFam3.1.ncrna	2.17522927	1.67456E-06	0.000369943
ENSCAFT00000033747.1	Canis_familiaris.CanFam3.1.ncrna	2.541241501	9.15558E-05	8.91111E-31
ENSCAFT00000033961.1	Canis_familiaris.CanFam3.1.ncrna	2.808304415	1.65014E-05	9.2039E-44
ENSCAFT00000033993.1	Canis_familiaris.CanFam3.1.ncrna	3.266746071	0.002167703	5.53283E-34
ENSCAFT00000034098.1	Canis_familiaris.CanFam3.1.ncrna	6.249386169	1.46531E-05	3.83343E-89
ENSCAFT00000034147.1	Canis_familiaris.CanFam3.1.ncrna	3.051056929	9.75647E-06	2.27747E-08
ENSCAFT00000034244.1	Canis_familiaris.CanFam3.1.ncrna	6.675621117	0.009312305	2.6392E-47
ENSCAFT00000034287.1	Canis_familiaris.CanFam3.1.ncrna	2.211607993	0.001796038	5.77419E-95
ENSCAFT00000034294.1	Canis_familiaris.CanFam3.1.ncrna	2.350797121	5.2032E-05	1.94302E-49
ENSCAFT00000034404.2	Canis_familiaris.CanFam3.1.ncrna	2.456791313	3.91484E-05	2.51268E-35
ENSCAFT00000034593.1	Canis_familiaris.CanFam3.1.ncrna	2.631159246	1.95762E-05	2.59308E-43
ENSCAFT00000034677.1	Canis_familiaris.CanFam3.1.ncrna	3.497826485	0.002817865	3.09748E-93
ENSCAFT00000034682.1	Canis_familiaris.CanFam3.1.ncrna	3.066435023	0.000802082	4.00225E-57
ENSCAFT00000034815.1	Canis_familiaris.CanFam3.1.ncrna	4.332402212	0.000122801	2.2627E-107
ENSCAFT00000034816.1	Canis_familiaris.CanFam3.1.ncrna	2.027311883	0.000365614	1.89531E-72
ENSCAFT00000034817.1	Canis_familiaris.CanFam3.1.ncrna	4.479190882	9.74608E-05	2.60465E-56
ENSCAFT00000034822.1	Canis_familiaris.CanFam3.1.ncrna	3.887916752	5.20995E-05	3.90011E-77
ENSCAFT00000034823.1	Canis_familiaris.CanFam3.1.ncrna	3.347738633	0.000758644	3.29982E-50
ENSCAFT00000034826.1	Canis_familiaris.CanFam3.1.ncrna	2.442407221	1.17782E-05	1.8996E-09
ENSCAFT00000034832.1	Canis_familiaris.CanFam3.1.ncrna	2.861910413	4.1491E-05	1.34211E-06
ENSCAFT00000034834.1	Canis_familiaris.CanFam3.1.ncrna	5.178550765	8.53587E-05	1.0243E-199
ENSCAFT00000034838.1	Canis_familiaris.CanFam3.1.ncrna	3.072800543	1.31168E-05	4.03702E-42
ENSCAFT00000034840.1	Canis_familiaris.CanFam3.1.ncrna	19.0195897	0.000207352	1.5835E-245
ENSCAFT00000034844.1	Canis_familiaris.CanFam3.1.ncrna	4.778849801	0.00194427	1.33208E-13
ENSCAFT00000034845.1	Canis_familiaris.CanFam3.1.ncrna	3.017589314	6.28733E-05	8.11151E-16
ENSCAFT00000034848.1	Canis_familiaris.CanFam3.1.ncrna	2.24916442	6.52804E-06	7.31039E-13
ENSCAFT00000035034.2	Canis_familiaris.CanFam3.1.ncrna	2.281447958	7.19891E-06	9.66398E-18
ENSCAFT00000035050.1	Canis_familiaris.CanFam3.1.ncrna	4.02465296	0.001663217	1.4379E-162
ENSCAFT00000035054.1	Canis_familiaris.CanFam3.1.ncrna	2.389189966	6.68541E-06	2.99683E-17
ENSCAFT00000035074.1	Canis_familiaris.CanFam3.1.ncrna	9.278353564	1.44221E-05	2.8712E-105
ENSCAFT00000035085.1	Canis_familiaris.CanFam3.1.ncrna	2.052043237	6.3198E-06	1.84694E-13
ENSCAFT00000040042.2	Canis_familiaris.CanFam3.1.ncrna	2.951791309	9.23704E-06	1.28767E-06
ENSCAFT00000040080.2	Canis_familiaris.CanFam3.1.ncrna	2.301972034	0.000657048	3.05259E-21
ENSCAFT00000040081.1	Canis_familiaris.CanFam3.1.ncrna	2.226424579	0.001244964	1.1252E-12
ENSCAFT00000040113.2	Canis_familiaris.CanFam3.1.ncrna	2.594570359	0.000949936	9.23521E-26
ENSCAFT00000040128.1	Canis_familiaris.CanFam3.1.ncrna	2.029348785	9.70558E-06	4.37853E-09
ENSCAFT00000040129.1	Canis_familiaris.CanFam3.1.ncrna	2.087966374	9.54574E-05	5.90736E-90
ENSCAFT00000040142.1	Canis_familiaris.CanFam3.1.ncrna	2.089889762	3.57423E-05	4.50594E-33
ENSCAFT00000040145.1	Canis_familiaris.CanFam3.1.ncrna	3.378538128	5.70824E-06	4.18123E-21
ENSCAFT00000040225.1	Canis_familiaris.CanFam3.1.ncrna	2.765944147	1.85732E-05	1.09E-58

ENSCAFT00000040256.1	Canis_familiaris.CanFam3.1.ncrna	2.449523225	0.000668331	1.20544E-67
ENSCAFT00000040257.1	Canis_familiaris.CanFam3.1.ncrna	13.86254229	1.55106E-05	8.54804E-96
ENSCAFT00000040260.1	Canis_familiaris.CanFam3.1.ncrna	6.521228015	4.50479E-06	1.41931E-24
ENSCAFT00000040266.1	Canis_familiaris.CanFam3.1.ncrna	2.189728968	1.30184E-05	2.64499E-24
ENSCAFT00000040275.1	Canis_familiaris.CanFam3.1.ncrna	3.721814352	1.31726E-05	3.75167E-46
ENSCAFT00000040312.1	Canis_familiaris.CanFam3.1.ncrna	3.343726782	4.31196E-06	7.78891E-16
ENSCAFT00000040322.1	Canis_familiaris.CanFam3.1.ncrna	2.223673298	4.8171E-06	2.23088E-10
ENSCAFT00000040393.1	Canis_familiaris.CanFam3.1.ncrna	2.609248214	1.46041E-05	2.46607E-23
ENSCAFT00000040428.1	Canis_familiaris.CanFam3.1.ncrna	2.783678645	1.20266E-05	7.21195E-34
ENSCAFT00000040459.1	Canis_familiaris.CanFam3.1.ncrna	2.569823385	2.12368E-06	4.24833E-06
ENSCAFT00000040493.1	Canis_familiaris.CanFam3.1.ncrna	3.012363294	3.51836E-05	3.38307E-40
ENSCAFT00000040497.1	Canis_familiaris.CanFam3.1.ncrna	5.70715718	6.93606E-06	4.01392E-35
ENSCAFT00000040528.1	Canis_familiaris.CanFam3.1.ncrna	2.535409397	0.000157882	5.37492E-69
ENSCAFT00000040575.1	Canis_familiaris.CanFam3.1.ncrna	2.109675074	0.000259236	2.66874E-89
ENSCAFT00000040605.1	Canis_familiaris.CanFam3.1.ncrna	2.357260981	2.69577E-06	2.94552E-07
ENSCAFT00000040611.1	Canis_familiaris.CanFam3.1.ncrna	2.796191914	1.07141E-06	0.002169049
ENSCAFT00000040657.1	Canis_familiaris.CanFam3.1.ncrna	3.818550273	5.73445E-06	3.80009E-23
ENSCAFT00000040718.1	Canis_familiaris.CanFam3.1.ncrna	2.39972593	2.57637E-06	5.97433E-07
ENSCAFT00000040754.1	Canis_familiaris.CanFam3.1.ncrna	2.464266831	3.05001E-06	1.05553E-08
ENSCAFT00000041019.1	Canis_familiaris.CanFam3.1.ncrna	2.290196023	4.32917E-05	3.13949E-42
ENSCAFT00000041174.2	Canis_familiaris.CanFam3.1.ncrna	2.764525156	1.84706E-05	1.05318E-56
ENSCAFT00000041661.1	Canis_familiaris.CanFam3.1.ncrna	2.778865525	1.97684E-05	6.96275E-32
ENSCAFT00000041755.1	Canis_familiaris.CanFam3.1.ncrna	2.829988933	1.60266E-05	7.36174E-30
ENSCAFT00000041801.1	Canis_familiaris.CanFam3.1.ncrna	2.268000291	0.000471301	7.28065E-12
ENSCAFT00000041844.1	Canis_familiaris.CanFam3.1.ncrna	3.224885571	0.000213197	1.14099E-25
ENSCAFT00000041872.1	Canis_familiaris.CanFam3.1.ncrna	2.109627329	4.93868E-06	2.00491E-10
ENSCAFT00000041997.1	Canis_familiaris.CanFam3.1.ncrna	2.446647267	3.61037E-06	4.65427E-08
ENSCAFT00000042127.1	Canis_familiaris.CanFam3.1.ncrna	2.257654119	1.97624E-06	0.003950911
ENSCAFT00000042169.1	Canis_familiaris.CanFam3.1.ncrna	2.064572795	6.8414E-06	1.48035E-13
ENSCAFT00000042184.1	Canis_familiaris.CanFam3.1.ncrna	2.402166837	2.13858E-06	2.82934E-05
ENSCAFT00000042367.2	Canis_familiaris.CanFam3.1.ncrna	3.17197898	4.82905E-05	1.68898E-68
ENSCAFT00000042378.1	Canis_familiaris.CanFam3.1.ncrna	2.621991478	1.01843E-05	2.06524E-23
ENSCAFT00000042410.1	Canis_familiaris.CanFam3.1.ncrna	2.231458269	2.61292E-05	3.27712E-10
ENSCAFT00000042440.1	Canis_familiaris.CanFam3.1.ncrna	4.167787269	9.22767E-06	5.44968E-38
ENSCAFT00000042503.1	Canis_familiaris.CanFam3.1.ncrna	4.85600981	1.35845E-05	2.84949E-55
ENSCAFT00000042508.1	Canis_familiaris.CanFam3.1.ncrna	4.492446204	0.012342983	7.1526E-113
ENSCAFT00000042523.1	Canis_familiaris.CanFam3.1.ncrna	5.427557101	0.020956521	3.99672E-37
ENSCAFT00000042525.1	Canis_familiaris.CanFam3.1.ncrna	2.683876255	1.97812E-05	1.8654E-46
ENSCAFT00000042545.1	Canis_familiaris.CanFam3.1.ncrna	3.145651826	0.000196653	2.12368E-43
ENSCAFT00000042554.1	Canis_familiaris.CanFam3.1.ncrna	3.54387127	1.14438E-05	6.15835E-41
ENSCAFT00000042647.1	Canis_familiaris.CanFam3.1.ncrna	3.127032555	5.22955E-05	6.26224E-46
ENSCAFT00000042720.1	Canis_familiaris.CanFam3.1.ncrna	4.626941808	3.49242E-06	9.05777E-14
ENSCAFT00000042730.1	Canis_familiaris.CanFam3.1.ncrna	2.639058198	4.50942E-05	1.09323E-54
ENSCAFT00000043246.1	Canis_familiaris.CanFam3.1.ncrna	3.29588556	0.001607667	5.0855E-112
ENSCAFT00000043257.1	Canis_familiaris.CanFam3.1.ncrna	2.162047627	6.86768E-06	1.93988E-15
ENSCAFT00000043561.1	Canis_familiaris.CanFam3.1.ncrna	2.053991555	6.30463E-06	6.57852E-13
ENSCAFT00000043634.2	Canis_familiaris.CanFam3.1.ncrna	4.69597065	0.006619653	0
ENSCAFT00000043639.1	Canis_familiaris.CanFam3.1.ncrna	2.242524947	7.16284E-06	1.09419E-16
ENSCAFT00000044384.3	Canis_familiaris.CanFam3.1.ncrna	10.95755053	1.29815E-05	3.32409E-79
ENSCAFT00000044389.1	Canis_familiaris.CanFam3.1.ncrna	2.048713735	7.3498E-06	6.41382E-15
ENSCAFT00000044771.2	Canis_familiaris.CanFam3.1.ncrna	2.462870995	0.001246848	5.79531E-19
ENSCAFT00000045445.2	Canis_familiaris.CanFam3.1.ncrna	2.612031263	0.004559349	1.87504E-79
ENSCAFT00000045563.1	Canis_familiaris.CanFam3.1.ncrna	2.159410314	1.37451E-05	1.10093E-21
ENSCAFT00000046542.2	Canis_familiaris.CanFam3.1.ncrna	4.749022842	0.000120663	1.2106E-148
ENSCAFT00000046993.1	Canis_familiaris.CanFam3.1.ncrna	3.063369861	0.000493633	4.12782E-97

ENSCAFT00000046995.1	Canis_familiaris.CanFam3.1.ncrna	2.324726067	7.60155E-06	2.38192E-17
ENSCAFT00000047282.1	Canis_familiaris.CanFam3.1.ncrna	9.255888792	1.05601E-05	9.0309E-81
ENSCAFT00000047517.1	Canis_familiaris.CanFam3.1.ncrna	3.290733096	0.001608078	4.0954E-108
ENSCAFT00000048662.1	Canis_familiaris.CanFam3.1.ncrna	2.239812214	6.84437E-06	1.203E-16
ENSCAFT00000048740.1	Canis_familiaris.CanFam3.1.ncrna	2.083644356	6.50762E-06	3.01203E-13
ENSCAFT00000048833.1	Canis_familiaris.CanFam3.1.ncrna	2.834556203	4.76047E-06	2.52767E-15
ENSCAFT00000049090.2	Canis_familiaris.CanFam3.1.ncrna	4.940195853	0.000121189	8.1578E-153
ENSCAFT00000049339.2	Canis_familiaris.CanFam3.1.ncrna	19.25881968	2.02291E-05	3.25958E-91
ENSCAFT00000049587.2	Canis_familiaris.CanFam3.1.ncrna	2.477167898	0.000768088	3.77504E-15
ENSCAFT00000050083.2	Canis_familiaris.CanFam3.1.ncrna	4.923410642	0.000119763	5.5263E-143
ENSCAFT00000052854.2	Canis_familiaris.CanFam3.1.ncrna	2.289752179	0.000579071	2.07975E-47
ENSCAFT00000053269.2	Canis_familiaris.CanFam3.1.ncrna	2.262276136	1.64503E-06	0.000287311
ENSCAFT00000055006.2	Canis_familiaris.CanFam3.1.ncrna	2.619660512	1.63675E-06	4.82661E-05
ENSCAFT00000055246.2	Canis_familiaris.CanFam3.1.ncrna	3.068341394	2.19088E-06	1.20069E-07
ENSCAFT00000055852.2	Canis_familiaris.CanFam3.1.ncrna	2.135405211	9.2713E-07	0.046514907
ENSCAFT00000056776.2	Canis_familiaris.CanFam3.1.ncrna	2.688904111	0.001539851	6.15323E-20
ENSCAFT00000059625.1	Canis_familiaris.CanFam3.1.ncrna	12.79068314	1.30712E-05	4.73E-98
ENSCAFT00000060125.1	Canis_familiaris.CanFam3.1.ncrna	2.285758965	0.000777344	1.21675E-72
ENSCAFT00000061408.1	Canis_familiaris.CanFam3.1.ncrna	3.140594988	2.16452E-06	1.58628E-07
ENSCAFT00000061677.1	Canis_familiaris.CanFam3.1.ncrna	3.335548201	3.72682E-06	6.7514E-14
ENSCAFT00000061889.1	Canis_familiaris.CanFam3.1.ncrna	2.371160156	1.98824E-06	2.05477E-05
ENSCAFT00000062308.1	Canis_familiaris.CanFam3.1.ncrna	4.794640689	9.5204E-05	4.9054E-128
ENSCAFT00000062877.1	Canis_familiaris.CanFam3.1.ncrna	13.39701246	1.88754E-05	3.4444E-112
ENSCAFT00000064070.1	Canis_familiaris.CanFam3.1.ncrna	2.942846094	2.29377E-06	7.52796E-07
ENSCAFT00000064613.1	Canis_familiaris.CanFam3.1.ncrna	5.513042689	2.30413E-05	4.9445E-113
ENSCAFT00000064745.1	Canis_familiaris.CanFam3.1.ncrna	6.369480903	6.74118E-06	3.98822E-33
ENSCAFT00000064909.1	Canis_familiaris.CanFam3.1.ncrna	3.273342426	1.52544E-06	0.000120273
ENSCAFT00000066217.1	Canis_familiaris.CanFam3.1.ncrna	14.66046379	6.34455E-05	5.0446E-133
ENSCAFT00000066287.1	Canis_familiaris.CanFam3.1.ncrna	4.436145968	3.30547E-06	2.51437E-15
ENSCAFT00000066767.1	Canis_familiaris.CanFam3.1.ncrna	2.513272503	0.002304067	3.61019E-14
ENSCAFT00000068774.1	Canis_familiaris.CanFam3.1.ncrna	3.050540299	1.17335E-06	0.001316783
ENSCAFT00000069599.1	Canis_familiaris.CanFam3.1.ncrna	8.591001095	0.007009003	3.33141E-50
ENSCAFT00000070849.1	Canis_familiaris.CanFam3.1.ncrna	3.767534636	2.99801E-06	1.3388E-11
ENSCAFT00000070939.1	Canis_familiaris.CanFam3.1.ncrna	2.578013895	2.98124E-06	9.1402E-09
ENSCAFT00000071611.1	Canis_familiaris.CanFam3.1.ncrna	4.447978577	1.55971E-05	4.43529E-81
ENSCAFT00000071727.1	Canis_familiaris.CanFam3.1.ncrna	2.42275757	3.81782E-05	9.251E-51
ENSCAFT00000071867.1	Canis_familiaris.CanFam3.1.ncrna	2.855864441	1.37829E-06	0.000114441
ENSCAFT00000072081.1	Canis_familiaris.CanFam3.1.ncrna	3.554812205	2.14655E-06	1.6072E-08
ENSCAFT00000072896.1	Canis_familiaris.CanFam3.1.ncrna	3.673588423	2.41638E-05	9.9059E-106
ENSCAFT00000073922.1	Canis_familiaris.CanFam3.1.ncrna	15.52733223	1.82239E-05	1.6052E-116
ENSCAFT00000075181.1	Canis_familiaris.CanFam3.1.ncrna	2.790542728	1.72274E-06	1.04181E-05
ENSCAFT00000075469.1	Canis_familiaris.CanFam3.1.ncrna	9.460953976	3.28628E-05	2.23515E-47
ENSCAFT00000075928.1	Canis_familiaris.CanFam3.1.ncrna	15.99548955	1.69928E-05	2.8298E-130
ENSCAFT00000075970.1	Canis_familiaris.CanFam3.1.ncrna	2.338826152	2.8324E-06	9.78682E-05
ENSCAFT00000076075.1	Canis_familiaris.CanFam3.1.ncrna	2.388334722	0.000670659	4.56884E-13
ENSCAFT00000076148.1	Canis_familiaris.CanFam3.1.ncrna	22.41284969	2.16434E-05	2.4042E-130
ENSCAFT00000076299.1	Canis_familiaris.CanFam3.1.ncrna	2.314506541	1.19658E-05	4.63224E-28
ENSCAFT00000076881.1	Canis_familiaris.CanFam3.1.ncrna	4.752325844	0.006589015	0
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ENSCAFT00000077352.1	Canis_familiaris.CanFam3.1.ncrna	2.385191353	1.23146E-06	0.001692552
ENSCAFT00000078594.1	Canis_familiaris.CanFam3.1.ncrna	4.463276226	2.65765E-05	5.31484E-40
ENSCAFT00000078908.1	Canis_familiaris.CanFam3.1.ncrna	2.849119831	4.48396E-06	1.35747E-10
ENSCAFT00000080459.1	Canis_familiaris.CanFam3.1.ncrna	3.488146387	5.10445E-05	1.20921E-21
ENSCAFT00000080913.1	Canis_familiaris.CanFam3.1.ncrna	9.45089588	1.32794E-05	5.1407E-100
ENSCAFT00000081225.1	Canis_familiaris.CanFam3.1.ncrna	3.595971007	3.78938E-05	7.0244E-129

ENSCAFT00000081555.1	Canis_familiaris.CanFam3.1.ncrna	4.774105065	1.78828E-05	4.20848E-61
ENSCAFT00000081617.1	Canis_familiaris.CanFam3.1.ncrna	2.214007529	1.28677E-06	0.003439685
ENSCAFT00000081763.1	Canis_familiaris.CanFam3.1.ncrna	2.213424232	1.49272E-06	0.000875304
ENSCAFT00000081917.1	Canis_familiaris.CanFam3.1.ncrna	2.504184083	0.000719278	2.18853E-16
ENSCAFT00000082979.1	Canis_familiaris.CanFam3.1.ncrna	31.17858462	2.09404E-05	2.8026E-143
ENSCAFT00000083784.1	Canis_familiaris.CanFam3.1.ncrna	3.239079528	2.48008E-06	2.01456E-08
ENSCAFT00000084155.1	Canis_familiaris.CanFam3.1.ncrna	2.384481722	2.0405E-06	1.40631E-05
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ENSCAFT00000084510.1	Canis_familiaris.CanFam3.1.ncrna	2.698594739	0.001545638	3.73212E-21
ENSCAFT00000085609.1	Canis_familiaris.CanFam3.1.ncrna	2.613150608	2.89048E-06	1.56755E-08
ENSCAFT00000086641.1	Canis_familiaris.CanFam3.1.ncrna	5.517283852	2.29523E-05	2.083E-139
ENSCAFT00000086750.1	Canis_familiaris.CanFam3.1.ncrna	2.770394358	1.20653E-05	3.32538E-34
ENSCAFT00000086768.1	Canis_familiaris.CanFam3.1.ncrna	2.09638948	1.18773E-06	0.010336334
ENSCAFT00000087428.1	Canis_familiaris.CanFam3.1.ncrna	2.489495941	0.001220068	1.0913E-17
ENSCAFT00000087554.1	Canis_familiaris.CanFam3.1.ncrna	2.479692866	1.06314E-06	0.005289908
ENSCAFT00000088934.1	Canis_familiaris.CanFam3.1.ncrna	2.704166392	0.001584551	1.76189E-21
ENSCAFT00000089110.1	Canis_familiaris.CanFam3.1.ncrna	2.26913667	1.90193E-06	7.06835E-05
ENSCAFT00000089743.1	Canis_familiaris.CanFam3.1.ncrna	2.387525699	1.16661E-06	0.005177656
ENSCAFT00000089803.1	Canis_familiaris.CanFam3.1.ncrna	3.2970529	1.68859E-05	3.10443E-12
ENSCAFT00000089893.1	Canis_familiaris.CanFam3.1.ncrna	5.898882047	2.32445E-06	3.71912E-12
ENSCAFT00000090034.1	Canis_familiaris.CanFam3.1.ncrna	12.88258167	0.000484395	2.7291E-212
ENSCAFT00000090556.1	Canis_familiaris.CanFam3.1.ncrna	3.103190648	2.126E-06	9.94356E-08
ENSCAFT00000091115.1	Canis_familiaris.CanFam3.1.ncrna	2.391937655	7.11676E-05	6.7442E-11
ENSCAFT00000091135.1	Canis_familiaris.CanFam3.1.ncrna	2.266100564	0.000577516	1.335E-42
ENSCAFT00000091326.1	Canis_familiaris.CanFam3.1.ncrna	10.67581149	1.94455E-05	5.3673E-99
ENSCAFT00000091455.1	Canis_familiaris.CanFam3.1.ncrna	2.785340675	0.001657886	3.95137E-24
ENSCAFT00000091489.1	Canis_familiaris.CanFam3.1.ncrna	10.89947457	9.03994E-06	4.99401E-70
ENSCAFT00000091981.1	Canis_familiaris.CanFam3.1.ncrna	4.587605597	5.45986E-06	1.28872E-23
ENSCAFT00000092679.1	Canis_familiaris.CanFam3.1.ncrna	3.163339131	1.55418E-06	2.62428E-05
ENSCAFT00000092884.1	Canis_familiaris.CanFam3.1.ncrna	2.167423898	2.83262E-06	0.009194801
ENSCAFT00000093028.1	Canis_familiaris.CanFam3.1.ncrna	5.465429724	9.5181E-06	8.10831E-39
ENSCAFT00000093238.1	Canis_familiaris.CanFam3.1.ncrna	2.332918924	3.16483E-06	3.59895E-06
ENSCAFT00000093391.1	Canis_familiaris.CanFam3.1.ncrna	4.121342968	0.001385646	4.63232E-65
ENSCAFT00000093415.1	Canis_familiaris.CanFam3.1.ncrna	3.653291065	2.35908E-06	5.58346E-09
ENST00000315707.3	Homo_sapiens.GRCh38.ncrna	3.273562397	0.001027789	5.17331E-26
ENST00000363341.1	Homo_sapiens.GRCh38.ncrna	7.97619503	4.16045E-06	2.87384E-25
ENST00000364308.1	Homo_sapiens.GRCh38.ncrna	4.143758697	1.74437E-05	4.8135E-61
ENST00000365208.1	Homo_sapiens.GRCh38.ncrna	2.604894519	1.70045E-06	3.21516E-05
ENST00000381493.2	Homo_sapiens.GRCh38.ncrna	2.17944894	3.40936E-06	2.36125E-05
ENST00000384478.1	Homo_sapiens.GRCh38.ncrna	4.598125484	2.40422E-05	2.03281E-34
ENST00000410413.1	Homo_sapiens.GRCh38.ncrna	3.717120386	0.009743521	1.70233E-75
ENST00000410717.1	Homo_sapiens.GRCh38.ncrna	2.480996164	1.86249E-05	2.12972E-07
ENST00000410949.1	Homo_sapiens.GRCh38.ncrna	4.558638202	3.94786E-06	8.96716E-17
ENST00000414046.3	Homo_sapiens.GRCh38.ncrna	2.281902079	1.23351E-06	0.003111176
ENST00000414532.6	Homo_sapiens.GRCh38.ncrna	7.405783096	4.60199E-06	1.81011E-27
ENST00000415386.2	Homo_sapiens.GRCh38.ncrna	2.126321298	0.000126846	1.28809E-52
ENST00000421315.2	Homo_sapiens.GRCh38.ncrna	4.609435799	1.98057E-06	3.00242E-06
ENST00000431311.1	Homo_sapiens.GRCh38.ncrna	15.05236651	0.000309226	5.0892E-99
ENST00000438002.1	Homo_sapiens.GRCh38.ncrna	2.238755865	0.000121079	1.41597E-59
ENST00000445808.3	Homo_sapiens.GRCh38.ncrna	4.970039936	3.52914E-06	4.47027E-17
ENST00000450451.1	Homo_sapiens.GRCh38.ncrna	4.920044066	7.21112E-06	2.31832E-34
ENST00000452982.1	Homo_sapiens.GRCh38.ncrna	18.21748863	0.00019568	1.9005E-101
ENST00000453554.1	Homo_sapiens.GRCh38.ncrna	2.251035504	0.000121192	5.16582E-56
ENST00000460249.5	Homo_sapiens.GRCh38.ncrna	3.86781486	2.26026E-05	6.20956E-09
ENST00000491009.6	Homo_sapiens.GRCh38.ncrna	3.819511887	2.26393E-05	2.79224E-09

ENST00000492250.5	Homo_sapiens.GRCh38.ncrna	3.839293311	2.26579E-05	2.92794E-09
ENST00000499525.1	Homo_sapiens.GRCh38.ncrna	4.433624652	9.00407E-05	1.29611E-53
ENST00000502125.6	Homo_sapiens.GRCh38.ncrna	8.393438998	0.00012971	2.09644E-96
ENST00000504082.1	Homo_sapiens.GRCh38.ncrna	7.641250805	3.80367E-06	2.41248E-17
ENST00000521204.1	Homo_sapiens.GRCh38.ncrna	15.74581995	1.63425E-05	4.6455E-125
ENST00000528151.1	Homo_sapiens.GRCh38.ncrna	8.127149458	1.7807E-05	8.1237E-122
ENST00000558929.5	Homo_sapiens.GRCh38.ncrna	8.521251232	0.000129939	2.33593E-97
ENST00000561344.5	Homo_sapiens.GRCh38.ncrna	8.460498888	0.000129614	1.84141E-96
ENST00000561402.5	Homo_sapiens.GRCh38.ncrna	8.405299228	0.000129566	3.51536E-95
ENST00000562904.1	Homo_sapiens.GRCh38.ncrna	2.289601717	1.19435E-05	2.02386E-19
ENST00000566930.6	Homo_sapiens.GRCh38.ncrna	2.583793222	1.48482E-06	0.000194652
ENST00000567127.1	Homo_sapiens.GRCh38.ncrna	2.610644386	1.47135E-06	0.000262787
ENST00000569473.1	Homo_sapiens.GRCh38.ncrna	4.926337871	4.75084E-05	2.2164E-128
ENST00000570843.1	Homo_sapiens.GRCh38.ncrna	5.127395138	0.002771397	6.6871E-99
ENST00000578774.1	Homo_sapiens.GRCh38.ncrna	29.50224811	4.83391E-05	1.0945E-120
ENST00000580344.1	Homo_sapiens.GRCh38.ncrna	21.10319859	0.000134478	2.9937E-121
ENST00000581621.1	Homo_sapiens.GRCh38.ncrna	2.168344966	6.84615E-06	3.37947E-15
ENST00000609127.1	Homo_sapiens.GRCh38.ncrna	2.981603032	0.0002241	9.68991E-35
ENST00000610199.1	Homo_sapiens.GRCh38.ncrna	5.55696623	5.10403E-06	4.5002E-08
ENST00000611066.1	Homo_sapiens.GRCh38.ncrna	19.1652904	9.49812E-05	9.8001E-123
ENST00000619431.1	Homo_sapiens.GRCh38.ncrna	4.453254919	9.02164E-05	5.29398E-55
ENST00000623717.1	Homo_sapiens.GRCh38.ncrna	2.967244603	2.80402E-06	1.40061E-09
ENST00000624919.1	Homo_sapiens.GRCh38.ncrna	2.16292838	1.08826E-05	7.52796E-07
ENST00000635451.1	Homo_sapiens.GRCh38.ncrna	18.19188154	0.000195806	7.8953E-102
ENST00000635780.1	Homo_sapiens.GRCh38.ncrna	2.704335224	1.59807E-06	8.28567E-05
ENST00000638132.1	Homo_sapiens.GRCh38.ncrna	2.070538778	2.28476E-06	0.000236683
ENST00000638356.1	Homo_sapiens.GRCh38.ncrna	2.514934928	0.000385595	1.2389E-32
ENST00000648228.1	Homo_sapiens.GRCh38.ncrna	2.564194693	0.000112932	3.49944E-60
ENST00000649079.1	Homo_sapiens.GRCh38.ncrna	15.13188415	0.00030924	2.32731E-96
ENST00000650189.1	Homo_sapiens.GRCh38.ncrna	2.568685859	0.000113503	9.55994E-65
ENST00000651140.1	Homo_sapiens.GRCh38.ncrna	2.085569632	0.000130163	2.29091E-41
ENST00000653954.1	Homo_sapiens.GRCh38.ncrna	3.894108002	2.25955E-05	1.389E-08
ENST00000654561.1	Homo_sapiens.GRCh38.ncrna	3.807311951	2.2531E-05	1.02115E-08
ENST00000655600.1	Homo_sapiens.GRCh38.ncrna	8.147003407	0.073037028	9.71877E-94
ENST00000660100.1	Homo_sapiens.GRCh38.ncrna	2.084385008	0.000129996	3.70639E-40
ENST00000660150.1	Homo_sapiens.GRCh38.ncrna	2.310360126	3.46701E-06	3.93691E-08
ENST00000660425.1	Homo_sapiens.GRCh38.ncrna	7.136262445	5.43982E-05	1.133E-44
ENST00000660562.1	Homo_sapiens.GRCh38.ncrna	2.961581151	2.17162E-06	2.55309E-05
ENST00000660907.1	Homo_sapiens.GRCh38.ncrna	2.236582652	0.000120177	6.01167E-48
ENST00000661409.1	Homo_sapiens.GRCh38.ncrna	3.823838888	5.40102E-05	5.49541E-26
ENST00000662252.1	Homo_sapiens.GRCh38.ncrna	3.899297018	1.15304E-05	4.68234E-08
ENST00000662741.1	Homo_sapiens.GRCh38.ncrna	10.24785765	1.47476E-05	2.31076E-69
ENST00000662795.1	Homo_sapiens.GRCh38.ncrna	2.261758314	0.000122617	3.71804E-62
ENST00000666785.1	Homo_sapiens.GRCh38.ncrna	2.254683738	0.000121777	3.81114E-59
ENST00000667915.1	Homo_sapiens.GRCh38.ncrna	2.391933143	2.22064E-06	5.51993E-06
ENST00000668460.1	Homo_sapiens.GRCh38.ncrna	2.230416057	0.000120443	8.17898E-57
ENST00000670361.1	Homo_sapiens.GRCh38.ncrna	18.17175624	0.000195582	1.1215E-102

Ch.2 : Differentially expressed down-regulated ncRNAs (except miRNA) between LMeC normoxic and hypoxic cell lines.

Small RNA - Name	Small RNA - Resource	Fold change	Weighted difference	FDR p
ENSCAFT00000016593.5	Canis_familiaris.CanFam3.1.ncrna	-3.848317318	-6.35637E-06	2.39884E-17
ENSCAFT00000032626.2	Canis_familiaris.CanFam3.1.ncrna	-3.996514278	-3.75719E-06	1.92349E-14
ENSCAFT00000032639.2	Canis_familiaris.CanFam3.1.ncrna	-7.306750399	-1.09979E-05	1.17119E-74
ENSCAFT00000032745.2	Canis_familiaris.CanFam3.1.ncrna	-10.65135226	-1.19826E-06	3.09309E-06
ENSCAFT00000033822.1	Canis_familiaris.CanFam3.1.ncrna	-2.710674417	-3.48711E-05	1.83848E-54
ENSCAFT00000034183.1	Canis_familiaris.CanFam3.1.ncrna	-3.516558679	-0.000157551	0
ENSCAFT00000034829.1	Canis_familiaris.CanFam3.1.ncrna	-2.343796337	-3.00457E-05	5.9363E-30
ENSCAFT00000040100.1	Canis_familiaris.CanFam3.1.ncrna	-2.063079734	-1.81381E-06	0.000785482
ENSCAFT00000040120.1	Canis_familiaris.CanFam3.1.ncrna	-13.84351725	-4.48766E-06	5.92336E-18
ENSCAFT00000040156.1	Canis_familiaris.CanFam3.1.ncrna	-2.13186974	-0.000177931	1.53574E-07
ENSCAFT00000040284.1	Canis_familiaris.CanFam3.1.ncrna	-2.881725473	-1.17889E-05	2.17735E-31
ENSCAFT00000040488.1	Canis_familiaris.CanFam3.1.ncrna	-3.433204923	-8.83597E-05	0
ENSCAFT00000040756.1	Canis_familiaris.CanFam3.1.ncrna	-3.611235893	-0.000137881	0
ENSCAFT00000041092.1	Canis_familiaris.CanFam3.1.ncrna	-2.083918401	-0.000142842	0
ENSCAFT00000041502.1	Canis_familiaris.CanFam3.1.ncrna	-4.364895895	-4.72673E-06	2.04544E-19
ENSCAFT00000041597.1	Canis_familiaris.CanFam3.1.ncrna	-9.333422258	-1.64374E-05	6.55614E-58
ENSCAFT00000041641.1	Canis_familiaris.CanFam3.1.ncrna	-2.94187847	-1.48668E-06	0.001384371
ENSCAFT00000041926.1	Canis_familiaris.CanFam3.1.ncrna	-8.608671225	-0.000118722	0
ENSCAFT00000041961.2	Canis_familiaris.CanFam3.1.ncrna	-99.89736082	-1.09784E-06	1.04823E-08
ENSCAFT00000041963.2	Canis_familiaris.CanFam3.1.ncrna	-3.897920393	-3.30675E-06	1.58046E-12
ENSCAFT00000042035.2	Canis_familiaris.CanFam3.1.ncrna	-2.331896343	-1.97186E-06	0.000116002
ENSCAFT00000042224.1	Canis_familiaris.CanFam3.1.ncrna	-2.44794617	-2.1975E-06	9.74082E-06
ENSCAFT00000042861.1	Canis_familiaris.CanFam3.1.ncrna	-3.52181237	-2.78411E-06	1.49295E-09
ENSCAFT00000043334.2	Canis_familiaris.CanFam3.1.ncrna	-2.292913767	-2.78648E-06	0.000205066
ENSCAFT00000045437.2	Canis_familiaris.CanFam3.1.ncrna	-3.206745588	-1.94384E-06	0.001435892
ENSCAFT00000045720.1	Canis_familiaris.CanFam3.1.ncrna	-3.024441648	-1.16633E-06	0.001006538
ENSCAFT00000047875.2	Canis_familiaris.CanFam3.1.ncrna	-4.038698272	-1.2927E-06	4.71132E-05
ENSCAFT00000048043.2	Canis_familiaris.CanFam3.1.ncrna	-2.692718734	-2.46931E-05	7.04029E-64
ENSCAFT00000050215.2	Canis_familiaris.CanFam3.1.ncrna	-2.830042327	-1.53675E-06	0.000108612
ENSCAFT00000050387.2	Canis_familiaris.CanFam3.1.ncrna	-6.573802028	-1.95114E-06	1.44268E-09
ENSCAFT00000050441.2	Canis_familiaris.CanFam3.1.ncrna	-2.850916324	-9.70488E-06	1.68935E-23
ENSCAFT00000050804.2	Canis_familiaris.CanFam3.1.ncrna	-3.208357574	-1.9376E-06	1.88989E-06
ENSCAFT00000050957.2	Canis_familiaris.CanFam3.1.ncrna	-5.09598402	-1.12544E-06	9.47396E-05
ENSCAFT00000050988.2	Canis_familiaris.CanFam3.1.ncrna	-3.698116559	-7.14433E-06	1.96118E-25
ENSCAFT00000051112.2	Canis_familiaris.CanFam3.1.ncrna	-2.796317464	-6.96511E-07	0.040306484
ENSCAFT00000051229.2	Canis_familiaris.CanFam3.1.ncrna	-2.940174977	-1.11758E-06	0.001981816
ENSCAFT00000051248.2	Canis_familiaris.CanFam3.1.ncrna	-2.08607636	-2.13866E-06	0.000214395
ENSCAFT00000051294.2	Canis_familiaris.CanFam3.1.ncrna	-2.55472994	-1.00324E-05	6.13965E-22
ENSCAFT00000051295.2	Canis_familiaris.CanFam3.1.ncrna	-2.692020658	-1.73932E-06	2.82692E-05
ENSCAFT00000051394.2	Canis_familiaris.CanFam3.1.ncrna	-2.330060799	-9.66362E-07	0.018102496
ENSCAFT00000051396.2	Canis_familiaris.CanFam3.1.ncrna	-5.146636787	-2.85716E-06	7.37195E-13
ENSCAFT00000051400.2	Canis_familiaris.CanFam3.1.ncrna	-4.765898423	-8.40416E-06	6.52858E-15
ENSCAFT00000051462.2	Canis_familiaris.CanFam3.1.ncrna	-6.925105699	-3.10861E-05	9.2833E-168
ENSCAFT00000051580.2	Canis_familiaris.CanFam3.1.ncrna	-3.558400542	-1.5704E-06	1.56719E-05
ENSCAFT00000051677.2	Canis_familiaris.CanFam3.1.ncrna	-2.122612546	-4.74899E-06	9.50739E-08
ENSCAFT00000051691.2	Canis_familiaris.CanFam3.1.ncrna	-3.910809368	-6.94067E-06	1.59753E-24
ENSCAFT00000051694.2	Canis_familiaris.CanFam3.1.ncrna	-4.813290073	-1.38306E-05	5.10629E-82
ENSCAFT00000051731.2	Canis_familiaris.CanFam3.1.ncrna	-2.504777518	-7.53449E-07	0.036405926
ENSCAFT00000051793.2	Canis_familiaris.CanFam3.1.ncrna	-2.947733345	-1.48915E-06	8.4709E-05
ENSCAFT00000051877.2	Canis_familiaris.CanFam3.1.ncrna	-9.954907666	-3.34903E-05	4.63095E-81
ENSCAFT00000051907.2	Canis_familiaris.CanFam3.1.ncrna	-6.709042846	-3.31813E-05	7.63137E-74
ENSCAFT00000051976.2	Canis_familiaris.CanFam3.1.ncrna	-2.492468082	-1.02849E-06	0.006810822
ENSCAFT00000051989.2	Canis_familiaris.CanFam3.1.ncrna	-3.147851255	-1.80394E-06	4.82607E-06
ENSCAFT00000052046.2	Canis_familiaris.CanFam3.1.ncrna	-4.072263257	-1.11413E-05	3.66134E-46
ENSCAFT00000052151.2	Canis_familiaris.CanFam3.1.ncrna	-2.511825686	-1.3266E-06	0.001623532
ENSCAFT00000052290.2	Canis_familiaris.CanFam3.1.ncrna	-2.184335204	-1.2624E-06	0.006066094
ENSCAFT00000052588.2	Canis_familiaris.CanFam3.1.ncrna	-3.036475318	-1.47984E-06	6.85334E-05
ENSCAFT00000052646.2	Canis_familiaris.CanFam3.1.ncrna	-4.487476244	-4.63581E-06	2.89026E-18
ENSCAFT00000052731.2	Canis_familiaris.CanFam3.1.ncrna	-7.55980824	-3.54029E-05	1.43967E-83
ENSCAFT00000052741.2	Canis_familiaris.CanFam3.1.ncrna	-2.709619348	-2.65926E-06	2.01551E-06
ENSCAFT00000052894.2	Canis_familiaris.CanFam3.1.ncrna	-3.297063364	-8.90656E-07	0.004777247
ENSCAFT00000052924.2	Canis_familiaris.CanFam3.1.ncrna	-4.586197435	-5.57706E-06	2.4149E-22
ENSCAFT00000052983.2	Canis_familiaris.CanFam3.1.ncrna	-2.456466885	-1.00382E-06	0.009806434
ENSCAFT00000053002.2	Canis_familiaris.CanFam3.1.ncrna	-3.327296371	-1.02879E-05	7.02603E-25
ENSCAFT00000053050.2	Canis_familiaris.CanFam3.1.ncrna	-5.711096844	-1.16043E-05	4.35043E-22
ENSCAFT00000053161.2	Canis_familiaris.CanFam3.1.ncrna	-4.377013559	-8.4338E-06	1.53318E-36
ENSCAFT00000053303.2	Canis_familiaris.CanFam3.1.ncrna	-3.547814406	-7.95998E-07	0.006624916
ENSCAFT00000053363.2	Canis_familiaris.CanFam3.1.ncrna	-5.035684611	-2.62901E-06	1.22895E-11
ENSCAFT00000053367.2	Canis_familiaris.CanFam3.1.ncrna	-2.511090149	-8.136E-07	0.036444161
ENSCAFT00000053497.2	Canis_familiaris.CanFam3.1.ncrna	-4.418889492	-1.12411E-05	5.1176E-48
ENSCAFT00000053580.2	Canis_familiaris.CanFam3.1.ncrna	-18.39789577	-3.46957E-06	2.60499E-23
ENSCAFT00000053761.2	Canis_familiaris.CanFam3.1.ncrna	-5.565194819	-2.18871E-05	7.8147E-138
ENSCAFT00000053768.2	Canis_familiaris.CanFam3.1.ncrna	-2.788864071	-2.24349E-06	1.03558E-06
ENSCAFT00000053781.2	Canis_familiaris.CanFam3.1.ncrna	-3.207624449	-1.85335E-06	2.88792E-06
ENSCAFT00000053801.2	Canis_familiaris.CanFam3.1.ncrna	-2.088668751	-3.41885E-06	1.94227E-05
ENSCAFT00000053808.2	Canis_familiaris.CanFam3.1.ncrna	-2.561440872	-2.3708E-06	3.93345E-06
ENSCAFT00000053869.2	Canis_familiaris.CanFam3.1.ncrna	-6.317268412	-1.58858E-05	1.25633E-83
ENSCAFT00000053871.2	Canis_familiaris.CanFam3.1.ncrna	-2.211820294	-1.38264E-06	0.003599323
ENSCAFT00000053946.2	Canis_familiaris.CanFam3.1.ncrna	-3.823154026	-9.59966E-06	1.36243E-29
ENSCAFT00000053998.2	Canis_familiaris.CanFam3.1.ncrna	-2.295445741	-1.91816E-06	0.000180915
ENSCAFT00000054008.2	Canis_familiaris.CanFam3.1.ncrna	-7.058278737	-1.89272E-06	3.35151E-09
ENSCAFT00000054016.2	Canis_familiaris.CanFam3.1.ncrna	-66.38637778	-6.47602E-05	1.02166E-66
ENSCAFT00000054149.2	Canis_familiaris.CanFam3.1.ncrna	-2.65586298	-1.88911E-06	0.000169541
ENSCAFT00000054168.2	Canis_familiaris.CanFam3.1.ncrna	-6.147645483	-2.6039E-05	1.41794E-86
ENSCAFT00000054319.2	Canis_familiaris.CanFam3.1.ncrna	-4.124533523	-8.58503E-07	0.00226185
ENSCAFT00000054330.2	Canis_familiaris.CanFam3.1.ncrna	-6.849743453	-3.20089E-05	1.22407E-94
ENSCAFT00000054337.2	Canis_familiaris.CanFam3.1.ncrna	-2.798253843	-1.10372E-06	0.002455132
ENSCAFT00000054434.2	Canis_familiaris.CanFam3.1.ncrna	-7.829737407	-2.14293E-05	4.5171E-141
ENSCAFT00000054492.2	Canis_familiaris.CanFam3.1.ncrna	-3.909435008	-2.1149E-06	4.58279E-08
ENSCAFT00000054517.2	Canis_familiaris.CanFam3.1.ncrna	-2.723994536	-1.64242E-06	7.03249E-05
ENSCAFT00000054575.2	Canis_familiaris.CanFam3.1.ncrna	-8.780464268	-1.25884E-06	9.10744E-06
ENSCAFT00000054597.2	Canis_familiaris.CanFam3.1.ncrna	-3.318570614	-5.70154E-06	2.0187E-18
ENSCAFT00000054628.2	Canis_familiaris.CanFam3.1.ncrna	-2.674406986	-1.15222E-06	0.004425001
ENSCAFT00000054629.2	Canis_familiaris.CanFam3.1.ncrna	-2.38201854	-1.4204E-06	0.00417856
ENSCAFT00000054648.2	Canis_familiaris.CanFam3.1.ncrna	-3.041115453	-2.02113E-06	1.97583E-06
ENSCAFT00000054877.2	Canis_familiaris.CanFam3.1.ncrna	-3.964121323	-5.16747E-06	3.81461E-19
ENSCAFT00000054996.2	Canis_familiaris.CanFam3.1.ncrna	-2.838729178	-2.37467E-06	5.90344E-07
ENSCAFT00000055066.2	Canis_familiaris.CanFam3.1.ncrna	-2.435114462	-1.52941E-06	0.000411127
ENSCAFT00000055103.2	Canis_familiaris.CanFam3.1.ncrna	-3.845564173	-5.67513E-07	0.028903087

ENSCAFT00000055128.2	Canis_familiaris.CanFam3.1.ncrna	-5.181268522	-1.30654E-06	7.67394E-06
ENSCAFT00000055155.2	Canis_familiaris.CanFam3.1.ncrna	-2.836992174	-2.58024E-06	7.14819E-08
ENSCAFT00000055204.2	Canis_familiaris.CanFam3.1.ncrna	-2.729888928	-2.36464E-06	1.22561E-05
ENSCAFT00000055207.2	Canis_familiaris.CanFam3.1.ncrna	-12.96529541	-3.73755E-06	4.52676E-21
ENSCAFT00000055237.2	Canis_familiaris.CanFam3.1.ncrna	-5.118076478	-3.23097E-05	5.5801E-99
ENSCAFT00000055265.2	Canis_familiaris.CanFam3.1.ncrna	-3.68316341	-1.2972E-05	6.41446E-29
ENSCAFT00000055328.2	Canis_familiaris.CanFam3.1.ncrna	-5.716380636	-7.51379E-06	7.66046E-39
ENSCAFT00000055436.2	Canis_familiaris.CanFam3.1.ncrna	-2.617709904	-6.72029E-06	4.07617E-16
ENSCAFT00000055441.2	Canis_familiaris.CanFam3.1.ncrna	-2.840487522	-2.72393E-06	9.62053E-08
ENSCAFT00000055774.2	Canis_familiaris.CanFam3.1.ncrna	-2.521482131	-2.5436E-06	0.000987598
ENSCAFT00000055803.2	Canis_familiaris.CanFam3.1.ncrna	-5.739682699	-1.25486E-05	4.8116E-82
ENSCAFT00000055888.2	Canis_familiaris.CanFam3.1.ncrna	-2.445861255	-1.30858E-05	1.15485E-28
ENSCAFT00000055985.2	Canis_familiaris.CanFam3.1.ncrna	-2.607459877	-4.13689E-06	2.28492E-10
ENSCAFT00000056034.2	Canis_familiaris.CanFam3.1.ncrna	-4.073423737	-3.04305E-06	1.66429E-11
ENSCAFT00000056038.2	Canis_familiaris.CanFam3.1.ncrna	-2.059178346	-1.88706E-06	0.000533276
ENSCAFT00000056046.2	Canis_familiaris.CanFam3.1.ncrna	-5.071076479	-3.66982E-05	5.0774E-110
ENSCAFT00000056056.2	Canis_familiaris.CanFam3.1.ncrna	-2.728786614	-9.95994E-07	0.004538348
ENSCAFT00000056186.2	Canis_familiaris.CanFam3.1.ncrna	-3.02005775	-1.08808E-06	0.007489277
ENSCAFT00000056226.2	Canis_familiaris.CanFam3.1.ncrna	-5.682318488	-2.4913E-05	1.8473E-140
ENSCAFT00000056532.2	Canis_familiaris.CanFam3.1.ncrna	-5.920142586	-1.67325E-05	2.42095E-94
ENSCAFT00000056553.2	Canis_familiaris.CanFam3.1.ncrna	-2.574418299	-9.02912E-06	3.37844E-19
ENSCAFT00000056555.2	Canis_familiaris.CanFam3.1.ncrna	-6.700068755	-3.57095E-05	6.3021E-114
ENSCAFT00000056606.2	Canis_familiaris.CanFam3.1.ncrna	-4.012164951	-5.70442E-06	4.51816E-21
ENSCAFT00000056610.2	Canis_familiaris.CanFam3.1.ncrna	-6.123471613	-1.06762E-05	3.62864E-44
ENSCAFT00000056639.2	Canis_familiaris.CanFam3.1.ncrna	-6.15869716	-1.71573E-05	2.8619E-106
ENSCAFT00000056652.2	Canis_familiaris.CanFam3.1.ncrna	-4.580378221	-7.14061E-07	0.003374088
ENSCAFT00000056654.2	Canis_familiaris.CanFam3.1.ncrna	-4.121488112	-8.57477E-07	0.00205339
ENSCAFT00000056766.2	Canis_familiaris.CanFam3.1.ncrna	-4.167590894	-1.05361E-05	1.96972E-44
ENSCAFT00000056894.2	Canis_familiaris.CanFam3.1.ncrna	-7.569725974	-4.2355E-05	6.5315E-181
ENSCAFT00000057138.2	Canis_familiaris.CanFam3.1.ncrna	-2.415966914	-8.65826E-06	6.3095E-19
ENSCAFT00000057149.2	Canis_familiaris.CanFam3.1.ncrna	-2.390334586	-8.00772E-07	0.044844214
ENSCAFT00000057153.2	Canis_familiaris.CanFam3.1.ncrna	-7.042319122	-2.1915E-05	3.2329E-143
ENSCAFT00000057232.2	Canis_familiaris.CanFam3.1.ncrna	-3.107002609	-3.11821E-06	3.88681E-10
ENSCAFT00000057271.2	Canis_familiaris.CanFam3.1.ncrna	-2.527150036	-2.20282E-06	6.66064E-06
ENSCAFT00000057435.2	Canis_familiaris.CanFam3.1.ncrna	-6.207272175	-1.30085E-05	1.16868E-61
ENSCAFT00000057440.2	Canis_familiaris.CanFam3.1.ncrna	-2.849178754	-0.000238712	0
ENSCAFT00000057443.2	Canis_familiaris.CanFam3.1.ncrna	-3.391148389	-7.47096E-07	0.009178103
ENSCAFT00000057591.2	Canis_familiaris.CanFam3.1.ncrna	-2.427875675	-2.4888E-06	2.53232E-06
ENSCAFT00000057642.2	Canis_familiaris.CanFam3.1.ncrna	-5.360012491	-1.8563E-06	0.000104379
ENSCAFT00000057673.2	Canis_familiaris.CanFam3.1.ncrna	-5.664916948	-1.77964E-05	3.3211E-114
ENSCAFT00000057749.2	Canis_familiaris.CanFam3.1.ncrna	-3.458464126	-6.41772E-06	2.28182E-21
ENSCAFT00000057763.2	Canis_familiaris.CanFam3.1.ncrna	-59.53190239	-9.46775E-06	3.47051E-66
ENSCAFT00000057845.2	Canis_familiaris.CanFam3.1.ncrna	-5.434421555	-2.69343E-05	5.66088E-81
ENSCAFT00000057988.2	Canis_familiaris.CanFam3.1.ncrna	-6.493495651	-2.79954E-05	6.85552E-90
ENSCAFT00000058066.2	Canis_familiaris.CanFam3.1.ncrna	-3.466860796	-5.97259E-06	1.13284E-19
ENSCAFT00000058101.2	Canis_familiaris.CanFam3.1.ncrna	-2.376685689	-2.81633E-06	1.025E-06
ENSCAFT00000058313.2	Canis_familiaris.CanFam3.1.ncrna	-2.276855227	-9.68432E-06	3.58213E-20
ENSCAFT00000058343.2	Canis_familiaris.CanFam3.1.ncrna	-4.908094931	-1.36821E-06	4.5187E-06
ENSCAFT00000058423.2	Canis_familiaris.CanFam3.1.ncrna	-5.32962554	-1.53749E-05	4.19344E-97
ENSCAFT00000058519.2	Canis_familiaris.CanFam3.1.ncrna	-6.166000876	-2.26169E-05	2.64995E-39
ENSCAFT00000058548.2	Canis_familiaris.CanFam3.1.ncrna	-2.066297838	-1.37712E-06	0.005106829
ENSCAFT00000058581.2	Canis_familiaris.CanFam3.1.ncrna	-4.25934952	-7.72904E-07	0.002448582
ENSCAFT00000058613.2	Canis_familiaris.CanFam3.1.ncrna	-2.491386357	-1.75866E-06	0.000164904
ENSCAFT00000058662.2	Canis_familiaris.CanFam3.1.ncrna	-2.594859291	-2.11985E-06	6.42075E-06
ENSCAFT00000058705.2	Canis_familiaris.CanFam3.1.ncrna	-3.829215973	-3.31687E-05	1.18817E-92
ENSCAFT00000058742.2	Canis_familiaris.CanFam3.1.ncrna	-3.255243329	-2.23381E-06	7.71048E-07
ENSCAFT00000058818.2	Canis_familiaris.CanFam3.1.ncrna	-4.747145415	-1.38718E-05	9.91068E-85
ENSCAFT00000058927.2	Canis_familiaris.CanFam3.1.ncrna	-2.337916131	-8.71512E-07	0.037222603
ENSCAFT00000059070.2	Canis_familiaris.CanFam3.1.ncrna	-3.1897971 97	-1.31381E-05	4.78823E-39
ENSCAFT00000059103.2	Canis_familiaris.CanFam3.1.ncrna	-2.842879677	-9.22888E-07	0.010395366
ENSCAFT00000059123.2	Canis_familiaris.CanFam3.1.ncrna	-3.456448242	-2.15514E-06	1.82046E-07
ENSCAFT00000059490.1	Canis_familiaris.CanFam3.1.ncrna	-8.961003173	-3.38668E-06	1.38401E-15
ENSCAFT00000059541.1	Canis_familiaris.CanFam3.1.ncrna	-4.571092728	-8.46689E-07	0.001390194
ENSCAFT00000059546.1	Canis_familiaris.CanFam3.1.ncrna	-3.065114401	-3.44349E-06	1.83322E-10
ENSCAFT00000059586.1	Canis_familiaris.CanFam3.1.ncrna	-6.005095556	-3.25995E-06	2.25977E-15
ENSCAFT00000059601.1	Canis_familiaris.CanFam3.1.ncrna	-3.162417263	-4.01333E-06	3.73145E-07
ENSCAFT00000059607.1	Canis_familiaris.CanFam3.1.ncrna	-2.054439577	-1.95792E-06	0.000299662
ENSCAFT00000059623.1	Canis_familiaris.CanFam3.1.ncrna	-2.31069795	-5.99386E-06	3.9153E-10
ENSCAFT00000059675.1	Canis_familiaris.CanFam3.1.ncrna	-9.219395783	-1.1856E-05	4.051E-83
ENSCAFT00000059728.1	Canis_familiaris.CanFam3.1.ncrna	-6.369205638	-4.30499E-06	4.16979E-22
ENSCAFT00000059756.1	Canis_familiaris.CanFam3.1.ncrna	-2.6860750 17	-9.71515E-07	0.006918331
ENSCAFT00000059769.1	Canis_familiaris.CanFam3.1.ncrna	-5.178952624	-1.77749E-06	8.71667E-08
ENSCAFT00000059784.1	Canis_familiaris.CanFam3.1.ncrna	-2.674181702	-1.59486E-06	0.000130025
ENSCAFT00000059802.1	Canis_familiaris.CanFam3.1.ncrna	-5.839245112	-2.97675E-05	5.365E-94
ENSCAFT00000059864.1	Canis_familiaris.CanFam3.1.ncrna	-6.572992438	-1.72684E-05	6.7005E-97
ENSCAFT00000059891.1	Canis_familiaris.CanFam3.1.ncrna	-5.84499372	-2.45106E-05	1.76692E-79
ENSCAFT00000060023.1	Canis_familiaris.CanFam3.1.ncrna	-9.739622637	-6.68451E-06	7.27812E-26
ENSCAFT00000060086.1	Canis_familiaris.CanFam3.1.ncrna	-2.30417189	-2.66798E-06	9.94318E-06
ENSCAFT00000060175.1	Canis_familiaris.CanFam3.1.ncrna	-3.974701792	-2.16178E-06	1.5362E-08
ENSCAFT00000060208.1	Canis_familiaris.CanFam3.1.ncrna	-2.327795776	-2.31546E-06	8.51183E-06
ENSCAFT00000060209.1	Canis_familiaris.CanFam3.1.ncrna	-5.793617213	-1.55837E-05	2.97997E-85
ENSCAFT00000060327.1	Canis_familiaris.CanFam3.1.ncrna	-4.983138137	-8.89443E-06	1.26319E-48
ENSCAFT00000060353.1	Canis_familiaris.CanFam3.1.ncrna	-4.506162793	-2.02011E-06	3.1745E-08
ENSCAFT00000060361.1	Canis_familiaris.CanFam3.1.ncrna	-5.843676287	-1.4283E-05	2.36737E-91
ENSCAFT00000060371.1	Canis_familiaris.CanFam3.1.ncrna	-3.654303819	-4.82791E-06	3.09155E-17
ENSCAFT00000060414.1	Canis_familiaris.CanFam3.1.ncrna	-2.639985901	-1.00655E-06	0.007196228
ENSCAFT00000060498.1	Canis_familiaris.CanFam3.1.ncrna	-6.116878352	-3.33278E-06	4.07617E-16
ENSCAFT00000060502.1	Canis_familiaris.CanFam3.1.ncrna	-6.57358078	-7.4086E-06	3.75298E-23
ENSCAFT00000060618.1	Canis_familiaris.CanFam3.1.ncrna	-4.312829184	-6.40089E-06	4.73024E-24
ENSCAFT00000060624.1	Canis_familiaris.CanFam3.1.ncrna	-3.047359191	-5.80631E-06	2.5883E-18
ENSCAFT00000060664.1	Canis_familiaris.CanFam3.1.ncrna	-3.637417374	-1.91665E-06	6.83661E-07
ENSCAFT00000060683.1	Canis_familiaris.CanFam3.1.ncrna	-2.891842444	-9.78162E-06	1.18905E-27
ENSCAFT00000060749.1	Canis_familiaris.CanFam3.1.ncrna	-2.121050113	-7.36225E-06	3.96078E-14
ENSCAFT00000060777.1	Canis_familiaris.CanFam3.1.ncrna	-4.579886567	-1.35227E-05	8.73833E-86
ENSCAFT00000060839.1	Canis_familiaris.CanFam3.1.ncrna	-3.230114105	-9.74326E-06	1.80724E-14
ENSCAFT00000060885.1	Canis_familiaris.CanFam3.1.ncrna	-3.058846302	-6.14853E-06	1.25277E-18
ENSCAFT00000060920.1	Canis_familiaris.CanFam3.1.ncrna	-2.296619964	-3.57896E-06	2.88019E-07
ENSCAFT00000060967.1	Canis_familiaris.CanFam3.1.ncrna	-3.139972446	-1.07166E-06	0.00158957
ENSCAFT00000060990.1	Canis_familiaris.CanFam3.1.ncrna	-2.858726423	-1.28164E-06	0.024446451
ENSCAFT00000061063.1	Canis_familiaris.CanFam3.1.ncrna	-2.385515849	-1.11137E-06	0.007092617

ENSCAFT00000061089.1	Canis_familiaris.CanFam3.1.ncrna	-3.354348849	-8.27412E-06	3.58158E-27
ENSCAFT00000061181.1	Canis_familiaris.CanFam3.1.ncrna	-2.09073617	-9.97891E-07	0.024946139
ENSCAFT00000061205.1	Canis_familiaris.CanFam3.1.ncrna	-4.488902348	-1.22119E-06	3.64189E-05
ENSCAFT00000061217.1	Canis_familiaris.CanFam3.1.ncrna	-3.922556293	-3.75905E-06	3.51306E-07
ENSCAFT00000061280.1	Canis_familiaris.CanFam3.1.ncrna	-9.109473166	-1.61725E-06	2.83441E-09
ENSCAFT00000061327.1	Canis_familiaris.CanFam3.1.ncrna	-6.424960034	-2.8255E-05	7.22107E-93
ENSCAFT00000061354.1	Canis_familiaris.CanFam3.1.ncrna	-3.235538312	-9.51099E-07	0.00292904
ENSCAFT00000061419.1	Canis_familiaris.CanFam3.1.ncrna	-3.09537365	-7.33582E-07	0.017807338
ENSCAFT00000061494.1	Canis_familiaris.CanFam3.1.ncrna	-7.092047059	-7.4091E-06	2.06284E-42
ENSCAFT00000061563.1	Canis_familiaris.CanFam3.1.ncrna	-3.583792429	-6.54914E-06	2.31565E-23
ENSCAFT00000061577.1	Canis_familiaris.CanFam3.1.ncrna	-9.715904246	-1.08162E-06	2.24456E-06
ENSCAFT00000061601.1	Canis_familiaris.CanFam3.1.ncrna	-10.92300762	-2.06677E-05	3.5212E-137
ENSCAFT00000061614.1	Canis_familiaris.CanFam3.1.ncrna	-2.092626631	-1.86365E-06	0.000612879
ENSCAFT00000061679.1	Canis_familiaris.CanFam3.1.ncrna	-4.007210611	-1.61901E-06	2.39313E-06
ENSCAFT00000061738.1	Canis_familiaris.CanFam3.1.ncrna	-3.194798278	-6.38896E-06	1.37126E-20
ENSCAFT00000061782.1	Canis_familiaris.CanFam3.1.ncrna	-6.925614491	-3.85922E-06	2.63157E-16
ENSCAFT00000061843.1	Canis_familiaris.CanFam3.1.ncrna	-3.141918177	-1.47469E-06	0.000618293
ENSCAFT00000061908.1	Canis_familiaris.CanFam3.1.ncrna	-2.397565165	-3.54297E-06	1.76819E-08
ENSCAFT00000061939.1	Canis_familiaris.CanFam3.1.ncrna	-2.23499491	-2.01384E-06	7.41231E-05
ENSCAFT00000061950.1	Canis_familiaris.CanFam3.1.ncrna	-2.145346911	-1.17754E-06	0.011518791
ENSCAFT00000061962.1	Canis_familiaris.CanFam3.1.ncrna	-2.931364906	-8.53109E-06	2.39964E-21
ENSCAFT00000062001.1	Canis_familiaris.CanFam3.1.ncrna	-5.563137809	-9.10116E-07	0.000461845
ENSCAFT00000062013.1	Canis_familiaris.CanFam3.1.ncrna	-5.39200583	-1.53738E-06	2.85265E-07
ENSCAFT00000062076.1	Canis_familiaris.CanFam3.1.ncrna	-8.979073969	-1.15091E-05	1.70668E-78
ENSCAFT00000062098.1	Canis_familiaris.CanFam3.1.ncrna	-2.92334679	-3.86112E-06	4.34481E-11
ENSCAFT00000062132.1	Canis_familiaris.CanFam3.1.ncrna	-2.353081492	-2.0538E-06	3.29307E-05
ENSCAFT00000062232.1	Canis_familiaris.CanFam3.1.ncrna	-9.632855388	-2.37203E-06	2.09508E-13
ENSCAFT00000062244.1	Canis_familiaris.CanFam3.1.ncrna	-2.159806185	-4.59852E-06	3.33468E-09
ENSCAFT00000062252.1	Canis_familiaris.CanFam3.1.ncrna	-3.348254139	-2.50286E-06	2.04099E-08
ENSCAFT00000062322.1	Canis_familiaris.CanFam3.1.ncrna	-4.014614827	-2.07724E-06	3.56065E-08
ENSCAFT00000062339.1	Canis_familiaris.CanFam3.1.ncrna	-2.666686357	-1.21133E-06	0.002362903
ENSCAFT00000062460.1	Canis_familiaris.CanFam3.1.ncrna	-3.863658016	-1.00272E-06	0.000826524
ENSCAFT00000062564.1	Canis_familiaris.CanFam3.1.ncrna	-2.944541676	-1.63293E-06	4.57902E-05
ENSCAFT00000062593.1	Canis_familiaris.CanFam3.1.ncrna	-2.35080016	-1.1849E-06	0.0074892777
ENSCAFT00000062640.1	Canis_familiaris.CanFam3.1.ncrna	-4.46072451	-2.15408E-05	5.59004E-30
ENSCAFT00000062666.1	Canis_familiaris.CanFam3.1.ncrna	-3.713199602	-5.24286E-06	1.42519E-18
ENSCAFT00000062674.1	Canis_familiaris.CanFam3.1.ncrna	-2.9965626615	-2.35216E-06	1.29064E-05
ENSCAFT00000062677.1	Canis_familiaris.CanFam3.1.ncrna	-5.172396359	-2.48765E-05	1.48424E-75
ENSCAFT00000062690.1	Canis_familiaris.CanFam3.1.ncrna	-2.443204709	-4.25627E-06	5.33646E-11
ENSCAFT00000062774.1	Canis_familiaris.CanFam3.1.ncrna	-4.995098771	-3.65541E-06	2.10603E-16
ENSCAFT00000062911.1	Canis_familiaris.CanFam3.1.ncrna	-4.467859436	-2.12825E-06	4.65468E-09
ENSCAFT00000062920.1	Canis_familiaris.CanFam3.1.ncrna	-2.566774633	-2.73226E-06	3.46339E-07
ENSCAFT00000062963.1	Canis_familiaris.CanFam3.1.ncrna	-3.821557954	-5.66347E-06	5.74412E-21
ENSCAFT00000062994.1	Canis_familiaris.CanFam3.1.ncrna	-4.992115663	-5.6076E-06	2.25128E-22
ENSCAFT00000063034.1	Canis_familiaris.CanFam3.1.ncrna	-2.996457435	-4.23195E-06	4.68965E-13
ENSCAFT00000063139.1	Canis_familiaris.CanFam3.1.ncrna	-3.1500264	-3.66946E-06	2.85348E-06
ENSCAFT00000063153.1	Canis_familiaris.CanFam3.1.ncrna	-7.861463843	-2.48846E-05	5.3035E-149
ENSCAFT00000063156.1	Canis_familiaris.CanFam3.1.ncrna	-7.30719684	-2.09757E-05	6.7834E-137
ENSCAFT00000063177.1	Canis_familiaris.CanFam3.1.ncrna	-6.305807459	-3.90291E-05	3.20812E-86
ENSCAFT00000063197.1	Canis_familiaris.CanFam3.1.ncrna	-5.705071136	-1.33417E-05	1.17653E-84
ENSCAFT00000063198.1	Canis_familiaris.CanFam3.1.ncrna	-6.907878964	-8.96798E-06	2.61399E-35
ENSCAFT00000063208.1	Canis_familiaris.CanFam3.1.ncrna	-5.645969256	-4.22212E-05	1.7055E-23
ENSCAFT00000063230.1	Canis_familiaris.CanFam3.1.ncrna	-3.724084177	-5.26321E-06	1.31545E-16
ENSCAFT00000063264.1	Canis_familiaris.CanFam3.1.ncrna	-2.514056431	-2.18356E-06	0.000304861
ENSCAFT00000063271.1	Canis_familiaris.CanFam3.1.ncrna	-2.760027137	-1.0799E-06	0.004035955
ENSCAFT00000063285.1	Canis_familiaris.CanFam3.1.ncrna	-4.803288073	-1.188E-06	6.83683E-05
ENSCAFT00000063310.1	Canis_familiaris.CanFam3.1.ncrna	-4.033927555	-3.69317E-06	7.14724E-14
ENSCAFT00000063321.1	Canis_familiaris.CanFam3.1.ncrna	-2.69473249	-1.29524E-06	0.000932843
ENSCAFT00000063388.1	Canis_familiaris.CanFam3.1.ncrna	-2.631076554	-4.07345E-06	4.63414E-11
ENSCAFT00000063613.1	Canis_familiaris.CanFam3.1.ncrna	-7.949177118	-8.62433E-07	9.41203E-05
ENSCAFT00000063624.1	Canis_familiaris.CanFam3.1.ncrna	-6.769425591	-7.15966E-07	0.001940371
ENSCAFT00000063652.1	Canis_familiaris.CanFam3.1.ncrna	-2.642958957	-4.6581E-06	1.24125E-12
ENSCAFT00000063678.1	Canis_familiaris.CanFam3.1.ncrna	-2.630557458	-2.22892E-06	2.3624E-06
ENSCAFT00000063691.1	Canis_familiaris.CanFam3.1.ncrna	-2.875228295	-1.64509E-06	4.16434E-05
ENSCAFT00000063740.1	Canis_familiaris.CanFam3.1.ncrna	-2.993104474	-1.29852E-06	0.01147917
ENSCAFT00000063778.1	Canis_familiaris.CanFam3.1.ncrna	-2.220237692	-1.66798E-06	0.000737009
ENSCAFT00000063814.1	Canis_familiaris.CanFam3.1.ncrna	-3.025003392	-9.37762E-07	0.006879623
ENSCAFT00000063826.1	Canis_familiaris.CanFam3.1.ncrna	-2.128532416	-2.17612E-06	0.002722601
ENSCAFT00000063843.1	Canis_familiaris.CanFam3.1.ncrna	-2.310034662	-3.42094E-06	2.36762E-07
ENSCAFT00000063898.1	Canis_familiaris.CanFam3.1.ncrna	-3.32129752	-4.04953E-06	3.45221E-12
ENSCAFT00000063950.1	Canis_familiaris.CanFam3.1.ncrna	-2.45875365	-1.0054E-06	0.010997668
ENSCAFT00000064031.1	Canis_familiaris.CanFam3.1.ncrna	-104.8163855	-1.67881E-05	4.88708E-48
ENSCAFT00000064145.1	Canis_familiaris.CanFam3.1.ncrna	-3.5508774	-6.94763E-06	3.8232E-23
ENSCAFT00000064154.1	Canis_familiaris.CanFam3.1.ncrna	-2.566535456	-1.19748E-06	0.002278179
ENSCAFT00000064184.1	Canis_familiaris.CanFam3.1.ncrna	-2.51111382	-3.1467E-06	1.42589E-08
ENSCAFT00000064242.1	Canis_familiaris.CanFam3.1.ncrna	-2.424252535	-2.53748E-06	7.82644E-06
ENSCAFT00000064276.1	Canis_familiaris.CanFam3.1.ncrna	-6.632820625	-3.29555E-05	7.39121E-96
ENSCAFT00000064351.1	Canis_familiaris.CanFam3.1.ncrna	-2.192999619	-1.6768E-06	0.001148251
ENSCAFT00000064357.1	Canis_familiaris.CanFam3.1.ncrna	-10.25049532	-3.94125E-06	2.94495E-09
ENSCAFT00000064485.1	Canis_familiaris.CanFam3.1.ncrna	-5.043400632	-4.00462E-06	2.06092E-15
ENSCAFT00000064506.1	Canis_familiaris.CanFam3.1.ncrna	-5.400893124	-1.18157E-05	9.9834E-64
ENSCAFT00000064510.1	Canis_familiaris.CanFam3.1.ncrna	-2.575916451	-2.45149E-06	1.27563E-06
ENSCAFT00000064541.1	Canis_familiaris.CanFam3.1.ncrna	-3.484523969	-2.92961E-06	3.5389E-10
ENSCAFT00000064547.1	Canis_familiaris.CanFam3.1.ncrna	-13.1342876	-2.42002E-06	8.06134E-15
ENSCAFT00000064571.1	Canis_familiaris.CanFam3.1.ncrna	-6.004237788	-5.90079E-06	1.87096E-20
ENSCAFT00000064651.1	Canis_familiaris.CanFam3.1.ncrna	-2.874684842	-1.00937E-06	0.003853536
ENSCAFT00000064656.1	Canis_familiaris.CanFam3.1.ncrna	-3.274873872	-1.39649E-06	6.85184E-05
ENSCAFT00000064658.1	Canis_familiaris.CanFam3.1.ncrna	-2.860870837	-1.77293E-06	0.000182034
ENSCAFT00000064673.1	Canis_familiaris.CanFam3.1.ncrna	-3.831777954	-3.55436E-06	1.80922E-06
ENSCAFT00000064710.1	Canis_familiaris.CanFam3.1.ncrna	-2.91914518	-1.03326E-06	0.002676441
ENSCAFT00000064722.1	Canis_familiaris.CanFam3.1.ncrna	-6.057476455	-5.7689E-06	1.84392E-18
ENSCAFT00000064732.1	Canis_familiaris.CanFam3.1.ncrna	-2.006712852	-9.96968E-07	0.038712765
ENSCAFT00000064794.1	Canis_familiaris.CanFam3.1.ncrna	-2.653026271	-2.4474E-06	0.001549029
ENSCAFT00000064809.1	Canis_familiaris.CanFam3.1.ncrna	-7.358947651	-7.89137E-07	0.000437292
ENSCAFT00000064814.1	Canis_familiaris.CanFam3.1.ncrna	-6.477503345	-1.75965E-05	1.3485E-114
ENSCAFT00000064876.1	Canis_familiaris.CanFam3.1.ncrna	-2.379438499	-1.05463E-06	0.019943291
ENSCAFT00000064948.1	Canis_familiaris.CanFam3.1.ncrna	-2.094647066	-1.91047E-06	0.010768096
ENSCAFT00000065011.1	Canis_familiaris.CanFam3.1.ncrna	-5.96800827	-1.97019E-05	8.4444E-125
ENSCAFT00000065040.1	Canis_familiaris.CanFam3.1.ncrna	-11.09202565	-1.2524E-06	3.45299E-07
ENSCAFT00000065084.1	Canis_familiaris.CanFam3.1.ncrna	-3.422814106	-7.69416E-06	5.13832E-12

ENSCAFT00000065145.1	Canis_familiaris.CanFam3.1.ncrna	-3.237403573	-3.31232E-06	1.2217E-10
ENSCAFT00000065161.1	Canis_familiaris.CanFam3.1.ncrna	-2.251612502	-2.552E-06	0.008324486
ENSCAFT00000065162.1	Canis_familiaris.CanFam3.1.ncrna	-7.176568711	-1.65838E-05	4.7491E-109
ENSCAFT00000065166.1	Canis_familiaris.CanFam3.1.ncrna	-2.654405042	-7.66225E-07	0.032048756
ENSCAFT00000065220.1	Canis_familiaris.CanFam3.1.ncrna	-3.165932548	-5.16299E-06	6.05342E-17
ENSCAFT00000065221.1	Canis_familiaris.CanFam3.1.ncrna	-2.906365367	-5.62106E-06	9.07136E-17
ENSCAFT00000065241.1	Canis_familiaris.CanFam3.1.ncrna	-2.31849507	-1.15698E-06	0.01118508
ENSCAFT00000065245.1	Canis_familiaris.CanFam3.1.ncrna	-8.246162431	-2.05533E-05	3.1778E-131
ENSCAFT00000065277.1	Canis_familiaris.CanFam3.1.ncrna	-6.294273208	-1.91999E-05	1.3474E-121
ENSCAFT00000065280.1	Canis_familiaris.CanFam3.1.ncrna	-2.827977924	-9.84077E-07	0.005214099
ENSCAFT00000065289.1	Canis_familiaris.CanFam3.1.ncrna	-2.011730036	-1.95471E-06	0.000570368
ENSCAFT00000065427.1	Canis_familiaris.CanFam3.1.ncrna	-2.200123766	-1.41623E-06	0.019363153
ENSCAFT00000065589.1	Canis_familiaris.CanFam3.1.ncrna	-6.214089603	-2.81448E-05	1.44462E-92
ENSCAFT00000065678.1	Canis_familiaris.CanFam3.1.ncrna	-2.530787734	-1.69002E-06	0.000571984
ENSCAFT00000065700.1	Canis_familiaris.CanFam3.1.ncrna	-3.423899147	-3.76984E-06	1.4069E-12
ENSCAFT00000065761.1	Canis_familiaris.CanFam3.1.ncrna	-2.121730428	-1.91396E-06	0.000213534
ENSCAFT00000065768.1	Canis_familiaris.CanFam3.1.ncrna	-2.389932325	-8.00645E-07	0.044531219
ENSCAFT00000065822.1	Canis_familiaris.CanFam3.1.ncrna	-4.519382747	-5.99961E-06	6.21636E-20
ENSCAFT00000065843.1	Canis_familiaris.CanFam3.1.ncrna	-10.51130839	-2.97072E-06	2.4955E-09
ENSCAFT00000065874.1	Canis_familiaris.CanFam3.1.ncrna	-6.519684137	-1.46119E-05	1.43312E-57
ENSCAFT00000065925.1	Canis_familiaris.CanFam3.1.ncrna	-2.807664721	-2.26717E-06	7.92278E-07
ENSCAFT00000065931.1	Canis_familiaris.CanFam3.1.ncrna	-3.525016645	-1.17264E-05	1.26772E-38
ENSCAFT00000065933.1	Canis_familiaris.CanFam3.1.ncrna	-2.679413919	-1.97895E-06	1.11025E-05
ENSCAFT00000066012.1	Canis_familiaris.CanFam3.1.ncrna	-2.430414224	-1.03954E-06	0.008153854
ENSCAFT00000066022.1	Canis_familiaris.CanFam3.1.ncrna	-2.084956384	-1.03376E-06	0.02504475
ENSCAFT00000066023.1	Canis_familiaris.CanFam3.1.ncrna	-4.55577676	-1.55744E-05	3.90768E-97
ENSCAFT00000066080.1	Canis_familiaris.CanFam3.1.ncrna	-8.363374184	-2.80959E-05	2.6816E-170
ENSCAFT00000066082.1	Canis_familiaris.CanFam3.1.ncrna	-5.170094124	-4.09009E-05	4.39236E-29
ENSCAFT00000066114.1	Canis_familiaris.CanFam3.1.ncrna	-2.606963438	-7.58112E-06	1.07706E-19
ENSCAFT00000066126.1	Canis_familiaris.CanFam3.1.ncrna	-4.251251567	-3.83196E-06	9.32374E-16
ENSCAFT00000066168.1	Canis_familiaris.CanFam3.1.ncrna	-3.694446041	-4.19499E-06	7.12475E-12
ENSCAFT00000066229.1	Canis_familiaris.CanFam3.1.ncrna	-3.672200491	-5.74954E-06	3.3167E-11
ENSCAFT00000066296.1	Canis_familiaris.CanFam3.1.ncrna	-2.315759214	-9.06734E-07	0.022996249
ENSCAFT00000066316.1	Canis_familiaris.CanFam3.1.ncrna	-6.253725423	-2.28218E-05	2.6687E-130
ENSCAFT00000066352.1	Canis_familiaris.CanFam3.1.ncrna	-8.48060419	-1.78373E-05	2.8618E-105
ENSCAFT00000066406.1	Canis_familiaris.CanFam3.1.ncrna	-3.830092737	-2.90929E-06	3.2154E-11
ENSCAFT00000066439.1	Canis_familiaris.CanFam3.1.ncrna	-7.979103587	-3.24053E-05	4.5203E-104
ENSCAFT00000066445.1	Canis_familiaris.CanFam3.1.ncrna	-3.580684517	-5.08389E-06	1.54896E-17
ENSCAFT00000066529.1	Canis_familiaris.CanFam3.1.ncrna	-7.223707438	-2.23365E-05	1.1564E-144
ENSCAFT00000066542.1	Canis_familiaris.CanFam3.1.ncrna	-2.134090017	-1.25122E-06	0.008881222
ENSCAFT00000066601.1	Canis_familiaris.CanFam3.1.ncrna	-3.564795566	-3.65525E-05	1.02381E-91
ENSCAFT00000066658.1	Canis_familiaris.CanFam3.1.ncrna	-5.575595497	-5.407E-06	1.13767E-10
ENSCAFT00000066663.1	Canis_familiaris.CanFam3.1.ncrna	-5.912799173	-1.04191E-05	2.96649E-56
ENSCAFT00000066719.1	Canis_familiaris.CanFam3.1.ncrna	-6.587334501	-4.48221E-06	1.40631E-19
ENSCAFT00000066723.1	Canis_familiaris.CanFam3.1.ncrna	-10.31180671	-1.15557E-06	4.98765E-07
ENSCAFT00000066757.1	Canis_familiaris.CanFam3.1.ncrna	-2.544871577	-8.27986E-06	1.11101E-21
ENSCAFT00000066760.1	Canis_familiaris.CanFam3.1.ncrna	-3.308156694	-1.58478E-05	2.55616E-54
ENSCAFT00000066806.1	Canis_familiaris.CanFam3.1.ncrna	-2.046716987	-3.42484E-06	0.006131196
ENSCAFT00000066830.1	Canis_familiaris.CanFam3.1.ncrna	-4.654324266	-1.00417E-06	0.00022107
ENSCAFT00000066847.1	Canis_familiaris.CanFam3.1.ncrna	-2.887156662	-6.60668E-07	0.0371297
ENSCAFT00000066858.1	Canis_familiaris.CanFam3.1.ncrna	-4.91179605	-4.6112E-06	4.87159E-20
ENSCAFT00000066867.1	Canis_familiaris.CanFam3.1.ncrna	-3.472760729	-2.82066E-06	5.75295E-09
ENSCAFT00000066910.1	Canis_familiaris.CanFam3.1.ncrna	-2.426467145	-3.13251E-06	5.11146E-08
ENSCAFT00000066943.1	Canis_familiaris.CanFam3.1.ncrna	-6.401848995	-2.95578E-05	2.32695E-91
ENSCAFT00000066972.1	Canis_familiaris.CanFam3.1.ncrna	-2.931394826	-2.13132E-06	1.83709E-05
ENSCAFT00000067006.1	Canis_familiaris.CanFam3.1.ncrna	-7.964676967	-2.78832E-05	8.1639E-160
ENSCAFT00000067104.1	Canis_familiaris.CanFam3.1.ncrna	-5.967559251	-1.55195E-06	1.31151E-07
ENSCAFT00000067149.1	Canis_familiaris.CanFam3.1.ncrna	-2.770718415	-2.68771E-06	5.33638E-08
ENSCAFT00000067155.1	Canis_familiaris.CanFam3.1.ncrna	-2.876557786	-1.64627E-06	4.1033E-05
ENSCAFT00000067164.1	Canis_familiaris.CanFam3.1.ncrna	-2.925987543	-3.47936E-05	1.57986E-27
ENSCAFT00000067182.1	Canis_familiaris.CanFam3.1.ncrna	-2.410872935	-1.61144E-06	0.004924705
ENSCAFT00000067186.1	Canis_familiaris.CanFam3.1.ncrna	-6.336886664	-1.95575E-05	1.5175E-124
ENSCAFT00000067213.1	Canis_familiaris.CanFam3.1.ncrna	-2.259549389	-2.86022E-06	6.44042E-07
ENSCAFT00000067221.1	Canis_familiaris.CanFam3.1.ncrna	-4.378494692	-1.39112E-05	2.67385E-67
ENSCAFT00000067284.1	Canis_familiaris.CanFam3.1.ncrna	-3.898043386	-2.5443E-06	1.78352E-05
ENSCAFT00000067416.1	Canis_familiaris.CanFam3.1.ncrna	-3.4467745156	-1.13274E-06	0.000618374
ENSCAFT00000067482.1	Canis_familiaris.CanFam3.1.ncrna	-2.003037415	-1.03131E-06	0.032505919
ENSCAFT00000067569.1	Canis_familiaris.CanFam3.1.ncrna	-7.400718458	-8.9909E-06	5.025E-62
ENSCAFT00000067642.1	Canis_familiaris.CanFam3.1.ncrna	-3.509418456	-3.14717E-06	2.9446E-11
ENSCAFT00000067695.1	Canis_familiaris.CanFam3.1.ncrna	-4.463300548	-1.86415E-06	8.10953E-08
ENSCAFT00000067700.1	Canis_familiaris.CanFam3.1.ncrna	-5.227132583	-8.01126E-06	8.82168E-22
ENSCAFT00000067737.1	Canis_familiaris.CanFam3.1.ncrna	-4.115531462	-1.20816E-06	0.000114013
ENSCAFT00000067835.1	Canis_familiaris.CanFam3.1.ncrna	-5.279914422	-1.53625E-05	2.05974E-91
ENSCAFT00000067847.1	Canis_familiaris.CanFam3.1.ncrna	-2.256214795	-1.5276E-06	0.001302209
ENSCAFT00000067866.1	Canis_familiaris.CanFam3.1.ncrna	-3.846211186	-5.67612E-07	0.029128362
ENSCAFT00000067887.1	Canis_familiaris.CanFam3.1.ncrna	-4.794745696	-1.18546E-06	3.77998E-05
ENSCAFT00000067991.1	Canis_familiaris.CanFam3.1.ncrna	-6.754190949	-1.79851E-06	7.35787E-09
ENSCAFT00000067992.1	Canis_familiaris.CanFam3.1.ncrna	-6.657529236	-1.12824E-06	1.1452E-05
ENSCAFT00000067997.1	Canis_familiaris.CanFam3.1.ncrna	-4.243372591	-4.55565E-06	3.957E-18
ENSCAFT00000068024.1	Canis_familiaris.CanFam3.1.ncrna	-3.37571366	-1.19009E-06	0.000638878
ENSCAFT00000068052.1	Canis_familiaris.CanFam3.1.ncrna	-4.537914903	-4.70348E-06	1.91047E-19
ENSCAFT00000068086.1	Canis_familiaris.CanFam3.1.ncrna	-2.012642746	-1.57666E-06	0.015757844
ENSCAFT00000068112.1	Canis_familiaris.CanFam3.1.ncrna	-3.776149643	-3.68846E-06	2.18171E-12
ENSCAFT00000068229.1	Canis_familiaris.CanFam3.1.ncrna	-2.518934177	-1.38954E-06	0.000861299
ENSCAFT00000068292.1	Canis_familiaris.CanFam3.1.ncrna	-3.621169385	-9.50603E-06	1.57988E-32
ENSCAFT00000068305.1	Canis_familiaris.CanFam3.1.ncrna	-5.626503024	-5.2847E-06	4.18635E-17
ENSCAFT00000068333.1	Canis_familiaris.CanFam3.1.ncrna	-6.470817936	-2.8288E-05	3.25958E-91
ENSCAFT00000068483.1	Canis_familiaris.CanFam3.1.ncrna	-7.036327686	-4.12234E-05	1.27211E-56
ENSCAFT00000068526.1	Canis_familiaris.CanFam3.1.ncrna	-2.55499628	-1.20269E-05	3.1662E-29
ENSCAFT00000068585.1	Canis_familiaris.CanFam3.1.ncrna	-3.050011269	-1.87592E-06	4.42088E-06
ENSCAFT00000068604.1	Canis_familiaris.CanFam3.1.ncrna	-4.55300115	-9.00132E-06	5.06369E-22
ENSCAFT00000068608.1	Canis_familiaris.CanFam3.1.ncrna	-4.881170314	-9.20188E-07	0.000572211
ENSCAFT00000068663.1	Canis_familiaris.CanFam3.1.ncrna	-2.665995395	-4.97605E-06	7.35661E-14
ENSCAFT00000068679.1	Canis_familiaris.CanFam3.1.ncrna	-6.676702464	-1.95189E-05	1.8602E-126
ENSCAFT00000068715.1	Canis_familiaris.CanFam3.1.ncrna	-2.793917589	-1.97955E-06	5.84909E-06
ENSCAFT00000068787.1	Canis_familiaris.CanFam3.1.ncrna	-2.84595116	-9.24337E-07	0.008200248
ENSCAFT00000068854.1	Canis_familiaris.CanFam3.1.ncrna	-2.54320969	-1.29622E-06	0.002938455
ENSCAFT00000068877.1	Canis_familiaris.CanFam3.1.ncrna	-3.955297965	-7.00731E-07	0.011049853
ENSCAFT00000068984.1	Canis_familiaris.CanFam3.1.ncrna	-4.619429969	-1.29912E-05	5.93461E-79
ENSCAFT00000069033.1	Canis_familiaris.CanFam3.1.ncrna	-3.480080605	-7.12848E-06	1.30882E-23

ENSCAFT00000069040.1	Canis_familiaris.CanFam3.1.ncrna	-3.002018374	-6.2543E-07	0.041801113
ENSCAFT00000069072.1	Canis_familiaris.CanFam3.1.ncrna	-4.637861329	-2.19636E-05	1.0279E-125
ENSCAFT00000069077.1	Canis_familiaris.CanFam3.1.ncrna	-3.480491855	-2.45745E-06	8.84745E-09
ENSCAFT00000069084.1	Canis_familiaris.CanFam3.1.ncrna	-4.803847645	-2.19148E-06	1.64426E-09
ENSCAFT00000069093.1	Canis_familiaris.CanFam3.1.ncrna	-5.342385273	-1.06788E-05	2.18347E-48
ENSCAFT00000069106.1	Canis_familiaris.CanFam3.1.ncrna	-2.869655093	-1.92424E-05	3.46776E-32
ENSCAFT00000069109.1	Canis_familiaris.CanFam3.1.ncrna	-3.62726665	-3.29466E-06	4.93437E-12
ENSCAFT00000069113.1	Canis_familiaris.CanFam3.1.ncrna	-2.254680934	-6.34529E-06	4.99845E-14
ENSCAFT00000069137.1	Canis_familiaris.CanFam3.1.ncrna	-5.954652931	-2.74915E-05	2.19808E-88
ENSCAFT00000069169.1	Canis_familiaris.CanFam3.1.ncrna	-2.133190033	-9.51676E-07	0.033904801
ENSCAFT00000069311.1	Canis_familiaris.CanFam3.1.ncrna	-3.759744212	-5.74807E-06	9.49149E-20
ENSCAFT00000069336.1	Canis_familiaris.CanFam3.1.ncrna	-2.091070467	-2.06659E-06	0.000169541
ENSCAFT00000069423.1	Canis_familiaris.CanFam3.1.ncrna	-9.162138507	-1.62968E-06	7.38883E-06
ENSCAFT00000069482.1	Canis_familiaris.CanFam3.1.ncrna	-8.916343612	-6.05097E-06	1.42688E-34
ENSCAFT00000069536.1	Canis_familiaris.CanFam3.1.ncrna	-2.075500162	-9.03079E-07	0.043909292
ENSCAFT00000069577.1	Canis_familiaris.CanFam3.1.ncrna	-2.422444932	-2.42693E-06	2.00863E-06
ENSCAFT00000069659.1	Canis_familiaris.CanFam3.1.ncrna	-7.423016197	-2.28136E-05	6.7071E-150
ENSCAFT00000069682.1	Canis_familiaris.CanFam3.1.ncrna	-2.98002364	-1.51389E-06	5.9878E-05
ENSCAFT00000069705.1	Canis_familiaris.CanFam3.1.ncrna	-2.576601146	-1.67985E-06	0.000140575
ENSCAFT00000069782.1	Canis_familiaris.CanFam3.1.ncrna	-12.77890263	-2.34886E-06	1.36657E-14
ENSCAFT00000069813.1	Canis_familiaris.CanFam3.1.ncrna	-2.002126316	-1.86042E-06	0.000680905
ENSCAFT00000069825.1	Canis_familiaris.CanFam3.1.ncrna	-3.296418662	-9.19685E-06	1.20937E-27
ENSCAFT00000069836.1	Canis_familiaris.CanFam3.1.ncrna	-4.625663631	-4.8187E-06	1.95962E-18
ENSCAFT00000069926.1	Canis_familiaris.CanFam3.1.ncrna	-4.54692493	-2.31025E-06	8.96431E-10
ENSCAFT00000070083.1	Canis_familiaris.CanFam3.1.ncrna	-8.216692103	-3.21476E-05	1.7254E-103
ENSCAFT00000070118.1	Canis_familiaris.CanFam3.1.ncrna	-3.21673555	-1.28829E-05	1.63625E-39
ENSCAFT00000070127.1	Canis_familiaris.CanFam3.1.ncrna	-3.745341911	-2.616E-06	9.62988E-10
ENSCAFT00000070140.1	Canis_familiaris.CanFam3.1.ncrna	-2.640759608	-8.11252E-06	8.12004E-22
ENSCAFT00000070194.1	Canis_familiaris.CanFam3.1.ncrna	-2.5566991	-8.38204E-07	0.026689624
ENSCAFT00000070199.1	Canis_familiaris.CanFam3.1.ncrna	-5.984596729	-2.31497E-05	1.7143E-142
ENSCAFT00000070237.1	Canis_familiaris.CanFam3.1.ncrna	-2.499155702	-1.71127E-06	0.005214949
ENSCAFT00000070277.1	Canis_familiaris.CanFam3.1.ncrna	-6.650259152	-2.3269E-05	3.33017E-91
ENSCAFT00000070306.1	Canis_familiaris.CanFam3.1.ncrna	-3.817364507	-7.6705E-06	3.697E-27
ENSCAFT00000070338.1	Canis_familiaris.CanFam3.1.ncrna	-10.94878446	-2.3583E-06	2.35254E-14
ENSCAFT00000070352.1	Canis_familiaris.CanFam3.1.ncrna	-2.984612573	-7.69623E-07	0.020557952
ENSCAFT00000070461.1	Canis_familiaris.CanFam3.1.ncrna	-2.999481849	-6.95154E-06	3.93091E-20
ENSCAFT00000070505.1	Canis_familiaris.CanFam3.1.ncrna	-4.861979696	-7.02406E-06	2.61642E-28
ENSCAFT00000070525.1	Canis_familiaris.CanFam3.1.ncrna	-3.235428077	-6.14182E-07	0.046529525
ENSCAFT00000070636.1	Canis_familiaris.CanFam3.1.ncrna	-4.922065738	-3.73567E-06	7.45093E-15
ENSCAFT00000070765.1	Canis_familiaris.CanFam3.1.ncrna	-2.271706894	-1.64307E-06	0.000808366
ENSCAFT00000070780.1	Canis_familiaris.CanFam3.1.ncrna	-2.002986079	-3.03345E-06	5.19691E-06
ENSCAFT00000070840.1	Canis_familiaris.CanFam3.1.ncrna	-3.933663714	-9.7568E-06	7.1945E-35
ENSCAFT00000070862.1	Canis_familiaris.CanFam3.1.ncrna	-28.07480357	-6.41936E-06	1.54811E-40
ENSCAFT00000070899.1	Canis_familiaris.CanFam3.1.ncrna	-3.839417308	-7.19332E-06	2.38726E-22
ENSCAFT00000070909.1	Canis_familiaris.CanFam3.1.ncrna	-4.580994352	-2.46763E-06	1.52226E-10
ENSCAFT00000070993.1	Canis_familiaris.CanFam3.1.ncrna	-3.67724249	-1.03806E-06	0.00069897
ENSCAFT00000071012.1	Canis_familiaris.CanFam3.1.ncrna	-3.00405573	-2.51323E-06	4.14136E-08
ENSCAFT00000071059.1	Canis_familiaris.CanFam3.1.ncrna	-4.486415272	-4.50311E-06	3.68578E-17
ENSCAFT00000071086.1	Canis_familiaris.CanFam3.1.ncrna	-4.15983603	-7.7721E-06	1.35942E-29
ENSCAFT00000071092.1	Canis_familiaris.CanFam3.1.ncrna	-17.60335089	-1.43479E-06	3.80233E-08
ENSCAFT00000071132.1	Canis_familiaris.CanFam3.1.ncrna	-7.528369751	-1.163E-05	1.16053E-75
ENSCAFT00000071141.1	Canis_familiaris.CanFam3.1.ncrna	-2.560473801	-1.89898E-06	0.003010838
ENSCAFT00000071173.1	Canis_familiaris.CanFam3.1.ncrna	-2.48220614	-9.09682E-07	0.023799921
ENSCAFT00000071206.1	Canis_familiaris.CanFam3.1.ncrna	-2.600831747	-8.61918E-07	0.019992478
ENSCAFT00000071236.1	Canis_familiaris.CanFam3.1.ncrna	-2.81955594	-8.44869E-06	7.7382E-22
ENSCAFT00000071248.1	Canis_familiaris.CanFam3.1.ncrna	-3.313055151	-3.68503E-06	1.07667E-12
ENSCAFT00000071288.1	Canis_familiaris.CanFam3.1.ncrna	-3.706457291	-8.45433E-07	0.003376056
ENSCAFT00000071289.1	Canis_familiaris.CanFam3.1.ncrna	-3.282932946	-4.83922E-06	8.63178E-16
ENSCAFT00000071291.1	Canis_familiaris.CanFam3.1.ncrna	-2.836210592	-2.23377E-06	9.93044E-07
ENSCAFT00000071329.1	Canis_familiaris.CanFam3.1.ncrna	-3.098151612	-2.23629E-06	2.98186E-07
ENSCAFT00000071344.1	Canis_familiaris.CanFam3.1.ncrna	-2.32904713	-9.65934E-07	0.017358828
ENSCAFT00000071358.1	Canis_familiaris.CanFam3.1.ncrna	-2.870704769	-4.67719E-06	1.4259E-07
ENSCAFT00000071373.1	Canis_familiaris.CanFam3.1.ncrna	-9.118919726	-6.0996E-05	1.3305E-179
ENSCAFT00000071379.1	Canis_familiaris.CanFam3.1.ncrna	-3.363818187	-5.81344E-06	8.9321E-15
ENSCAFT00000071382.1	Canis_familiaris.CanFam3.1.ncrna	-4.553438195	-6.4646E-06	8.60888E-24
ENSCAFT00000071438.1	Canis_familiaris.CanFam3.1.ncrna	-5.515303924	-1.56964E-05	3.8231E-99
ENSCAFT00000071449.1	Canis_familiaris.CanFam3.1.ncrna	-4.36764165	-1.30594E-06	3.26647E-05
ENSCAFT00000071508.1	Canis_familiaris.CanFam3.1.ncrna	-4.184028297	-3.15273E-06	3.15699E-07
ENSCAFT00000071523.1	Canis_familiaris.CanFam3.1.ncrna	-5.503513108	-1.23854E-06	0.000245711
ENSCAFT00000071552.1	Canis_familiaris.CanFam3.1.ncrna	-3.156338051	-6.73699E-07	0.029649027
ENSCAFT00000071565.1	Canis_familiaris.CanFam3.1.ncrna	-2.317280309	-1.40417E-06	0.003796223
ENSCAFT00000071568.1	Canis_familiaris.CanFam3.1.ncrna	-4.46176406	-1.69881E-05	1.40825E-83
ENSCAFT00000071570.1	Canis_familiaris.CanFam3.1.ncrna	-2.9178214	-4.14235E-06	8.01681E-08
ENSCAFT00000071579.1	Canis_familiaris.CanFam3.1.ncrna	-3.163731551	-7.57511E-07	0.025456454
ENSCAFT00000071671.1	Canis_familiaris.CanFam3.1.ncrna	-2.244095773	-8.57263E-07	0.049287823
ENSCAFT00000071676.1	Canis_familiaris.CanFam3.1.ncrna	-2.99492141	-4.38073E-06	1.19894E-11
ENSCAFT00000071698.1	Canis_familiaris.CanFam3.1.ncrna	-6.30755721	-2.26564E-05	6.1938E-109
ENSCAFT00000071711.1	Canis_familiaris.CanFam3.1.ncrna	-5.065295085	-7.70114E-06	6.0303E-37
ENSCAFT00000071764.1	Canis_familiaris.CanFam3.1.ncrna	-2.625675326	-2.46693E-06	7.28609E-07
ENSCAFT00000071774.1	Canis_familiaris.CanFam3.1.ncrna	-5.942013212	-2.48117E-05	5.79723E-83
ENSCAFT00000071779.1	Canis_familiaris.CanFam3.1.ncrna	-2.481056546	-9.09089E-07	0.023453019
ENSCAFT00000071810.1	Canis_familiaris.CanFam3.1.ncrna	-2.336308159	-3.18815E-05	2.31825E-33
ENSCAFT00000071856.1	Canis_familiaris.CanFam3.1.ncrna	-5.288969845	-1.39346E-05	1.46518E-65
ENSCAFT00000071857.1	Canis_familiaris.CanFam3.1.ncrna	-7.950819158	-8.62589E-07	9.46583E-05
ENSCAFT00000071891.1	Canis_familiaris.CanFam3.1.ncrna	-2.154289246	-1.53473E-06	0.00149569
ENSCAFT00000071930.1	Canis_familiaris.CanFam3.1.ncrna	-2.223655616	-1.11975E-06	0.01202668
ENSCAFT00000071980.1	Canis_familiaris.CanFam3.1.ncrna	-3.670517922	-3.14764E-06	1.82362E-11
ENSCAFT00000072037.1	Canis_familiaris.CanFam3.1.ncrna	-5.293778619	-1.98776E-06	7.35787E-09
ENSCAFT00000072054.1	Canis_familiaris.CanFam3.1.ncrna	-2.345275678	-7.56073E-06	1.16171E-13
ENSCAFT00000072080.1	Canis_familiaris.CanFam3.1.ncrna	-2.349044254	-1.74242E-06	0.000170633
ENSCAFT00000072142.1	Canis_familiaris.CanFam3.1.ncrna	-2.506992272	-1.20847E-06	0.002294323
ENSCAFT00000072151.1	Canis_familiaris.CanFam3.1.ncrna	-3.935863496	-2.75603E-05	1.0541E-124
ENSCAFT00000072186.1	Canis_familiaris.CanFam3.1.ncrna	-7.93773076	-3.47235E-06	3.37947E-15
ENSCAFT00000072192.1	Canis_familiaris.CanFam3.1.ncrna	-2.600692864	-1.40409E-06	0.000855983
ENSCAFT00000072221.1	Canis_familiaris.CanFam3.1.ncrna	-5.365538296	-1.19944E-06	2.21214E-05
ENSCAFT00000072224.1	Canis_familiaris.CanFam3.1.ncrna	-2.649695627	-4.12088E-06	3.43309E-11
ENSCAFT00000072378.1	Canis_familiaris.CanFam3.1.ncrna	-2.711453593	-1.1147E-06	0.003156624
ENSCAFT00000072414.1	Canis_familiaris.CanFam3.1.ncrna	-5.704926171	-3.06445E-06	2.65437E-14
ENSCAFT00000072447.1	Canis_familiaris.CanFam3.1.ncrna	-4.124609765	-7.56818E-06	1.01E-23
ENSCAFT00000072450.1	Canis_familiaris.CanFam3.1.ncrna	-2.125826036	-3.86826E-06	3.31173E-06

ENSCAFT00000072453.1	Canis_familiaris.CanFam3.1.ncrna	-5.416977527	-5.04008E-06	7.06752E-23
ENSCAFT00000072484.1	Canis_familiaris.CanFam3.1.ncrna	-2.533850139	-1.63484E-06	0.000793804
ENSCAFT00000072509.1	Canis_familiaris.CanFam3.1.ncrna	-6.803898201	-1.33995E-05	1.52799E-83
ENSCAFT00000072522.1	Canis_familiaris.CanFam3.1.ncrna	-3.638123505	-8.97261E-06	2.08879E-31
ENSCAFT00000072556.1	Canis_familiaris.CanFam3.1.ncrna	-4.183227036	-3.03355E-06	5.91464E-12
ENSCAFT00000072707.1	Canis_familiaris.CanFam3.1.ncrna	-3.749397931	-2.10547E-06	4.32348E-05
ENSCAFT00000072728.1	Canis_familiaris.CanFam3.1.ncrna	-2.345461774	-2.60678E-06	0.005480491
ENSCAFT00000072733.1	Canis_familiaris.CanFam3.1.ncrna	-5.803728852	-1.59773E-05	1.4494E-99
ENSCAFT00000072743.1	Canis_familiaris.CanFam3.1.ncrna	-5.498140529	-1.06657E-06	5.75558E-05
ENSCAFT00000072744.1	Canis_familiaris.CanFam3.1.ncrna	-4.523531853	-1.80835E-05	2.9574E-101
ENSCAFT00000072808.1	Canis_familiaris.CanFam3.1.ncrna	-2.832769212	-2.16054E-06	0.000408428
ENSCAFT00000072831.1	Canis_familiaris.CanFam3.1.ncrna	-5.023517399	-8.22813E-06	3.73241E-35
ENSCAFT00000072952.1	Canis_familiaris.CanFam3.1.ncrna	-3.552884965	-1.18224E-06	0.0002497
ENSCAFT00000072980.1	Canis_familiaris.CanFam3.1.ncrna	-9.482973551	-2.64994E-06	7.79133E-15
ENSCAFT00000073138.1	Canis_familiaris.CanFam3.1.ncrna	-6.747890652	-3.29784E-05	5.1448E-101
ENSCAFT00000073156.1	Canis_familiaris.CanFam3.1.ncrna	-2.656004032	-7.66982E-07	0.030904815
ENSCAFT00000073194.1	Canis_familiaris.CanFam3.1.ncrna	-6.635010512	-5.58071E-06	2.53851E-29
ENSCAFT00000073204.1	Canis_familiaris.CanFam3.1.ncrna	-2.250893648	-1.1447E-06	0.009536115
ENSCAFT00000073318.1	Canis_familiaris.CanFam3.1.ncrna	-2.956038389	-6.84842E-07	0.025451787
ENSCAFT00000073323.1	Canis_familiaris.CanFam3.1.ncrna	-2.340776757	-1.27727E-06	0.002646587
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ENSCAFT00000073385.1	Canis_familiaris.CanFam3.1.ncrna	-6.169180342	-1.03093E-06	4.89868E-05
ENSCAFT00000073400.1	Canis_familiaris.CanFam3.1.ncrna	-2.0435039	-3.62729E-06	1.47559E-07
ENSCAFT00000073420.1	Canis_familiaris.CanFam3.1.ncrna	-2.576276897	-2.15447E-06	4.31056E-06
ENSCAFT00000073431.1	Canis_familiaris.CanFam3.1.ncrna	-3.60603809	-1.8936E-06	3.36011E-07
ENSCAFT00000073453.1	Canis_familiaris.CanFam3.1.ncrna	-2.465643555	-7.89264E-07	0.036899489
ENSCAFT00000073459.1	Canis_familiaris.CanFam3.1.ncrna	-2.06149115	-1.21155E-06	0.011046197
ENSCAFT00000073472.1	Canis_familiaris.CanFam3.1.ncrna	-5.487568186	-2.23595E-05	4.0786E-138
ENSCAFT00000073545.1	Canis_familiaris.CanFam3.1.ncrna	-8.101879454	-2.95017E-05	7.0136E-100
ENSCAFT00000073620.1	Canis_familiaris.CanFam3.1.ncrna	-2.405368376	-5.15E-06	7.64085E-13
ENSCAFT00000073636.1	Canis_familiaris.CanFam3.1.ncrna	-4.209449486	-5.3542E-06	1.07508E-18
ENSCAFT00000073647.1	Canis_familiaris.CanFam3.1.ncrna	-2.762055156	-1.34543E-06	0.001631651
ENSCAFT00000073658.1	Canis_familiaris.CanFam3.1.ncrna	-6.745019172	-9.15167E-06	2.40604E-61
ENSCAFT00000073689.1	Canis_familiaris.CanFam3.1.ncrna	-4.056737593	-7.24815E-07	0.005210057
ENSCAFT00000073701.1	Canis_familiaris.CanFam3.1.ncrna	-4.130113724	-1.44936E-06	8.8357E-06
ENSCAFT00000073776.1	Canis_familiaris.CanFam3.1.ncrna	-8.115412448	-8.92359E-06	4.41912E-62
ENSCAFT00000073780.1	Canis_familiaris.CanFam3.1.ncrna	-5.277295134	-2.01772E-05	3.60911E-33
ENSCAFT00000073782.1	Canis_familiaris.CanFam3.1.ncrna	-2.246892216	-6.35353E-06	1.35558E-14
ENSCAFT00000073790.1	Canis_familiaris.CanFam3.1.ncrna	-3.678076489	-4.87128E-06	8.19023E-18
ENSCAFT00000073841.1	Canis_familiaris.CanFam3.1.ncrna	-2.16291629	-8.45244E-07	0.047853958
ENSCAFT00000073907.1	Canis_familiaris.CanFam3.1.ncrna	-4.65344233	-1.46246E-05	3.57135E-39
ENSCAFT00000073946.1	Canis_familiaris.CanFam3.1.ncrna	-2.654744416	-7.66591E-07	0.033022811
ENSCAFT00000073969.1	Canis_familiaris.CanFam3.1.ncrna	-8.56131389	-3.85324E-05	1.46235E-57
ENSCAFT00000074013.1	Canis_familiaris.CanFam3.1.ncrna	-2.948352645	-1.48959E-06	0.000142503
ENSCAFT00000074099.1	Canis_familiaris.CanFam3.1.ncrna	-2.494246164	-2.49134E-06	7.49653E-06
ENSCAFT00000074121.1	Canis_familiaris.CanFam3.1.ncrna	-2.171918231	-9.39875E-07	0.03876945
ENSCAFT00000074163.1	Canis_familiaris.CanFam3.1.ncrna	-2.347126173	-2.3999E-06	5.78467E-06
ENSCAFT00000074193.1	Canis_familiaris.CanFam3.1.ncrna	-3.86844265	-7.92005E-06	2.07052E-25
ENSCAFT00000074197.1	Canis_familiaris.CanFam3.1.ncrna	-2.399630549	-1.91263E-06	6.77266E-05
ENSCAFT00000074236.1	Canis_familiaris.CanFam3.1.ncrna	-2.568026893	-1.3756E-06	0.000846385
ENSCAFT00000074292.1	Canis_familiaris.CanFam3.1.ncrna	-2.375264524	-8.95871E-07	0.027156687
ENSCAFT00000074311.1	Canis_familiaris.CanFam3.1.ncrna	-4.981774794	-2.0585E-05	3.73166E-34
ENSCAFT00000074319.1	Canis_familiaris.CanFam3.1.ncrna	-3.585922967	-4.31346E-06	2.08858E-13
ENSCAFT00000074355.1	Canis_familiaris.CanFam3.1.ncrna	-4.399761808	-7.84644E-06	1.01178E-33
ENSCAFT00000074453.1	Canis_familiaris.CanFam3.1.ncrna	-3.212175616	-2.27443E-06	8.70857E-08
ENSCAFT00000074478.1	Canis_familiaris.CanFam3.1.ncrna	-2.324198816	-2.40894E-06	8.82684E-06
ENSCAFT00000074516.1	Canis_familiaris.CanFam3.1.ncrna	-2.478936896	-1.35271E-06	0.017579518
ENSCAFT00000074544.1	Canis_familiaris.CanFam3.1.ncrna	-2.578855805	-2.156E-06	2.19703E-05
ENSCAFT00000074571.1	Canis_familiaris.CanFam3.1.ncrna	-3.25400265	-5.96753E-06	1.82702E-19
ENSCAFT00000074593.1	Canis_familiaris.CanFam3.1.ncrna	-2.667865823	-6.10964E-06	5.23979E-15
ENSCAFT00000074759.1	Canis_familiaris.CanFam3.1.ncrna	-2.6435587	-9.46829E-07	0.008629415
ENSCAFT00000074780.1	Canis_familiaris.CanFam3.1.ncrna	-6.672745471	-1.37346E-05	4.88254E-90
ENSCAFT00000074885.1	Canis_familiaris.CanFam3.1.ncrna	-5.864853456	-8.11573E-06	5.31484E-40
ENSCAFT00000074946.1	Canis_familiaris.CanFam3.1.ncrna	-2.47773596	-1.51901E-06	0.000367974
ENSCAFT00000075002.1	Canis_familiaris.CanFam3.1.ncrna	-3.931996082	-7.54125E-06	1.38526E-25
ENSCAFT00000075098.1	Canis_familiaris.CanFam3.1.ncrna	-2.719357104	-1.0549E-06	0.003499463
ENSCAFT00000075300.1	Canis_familiaris.CanFam3.1.ncrna	-2.423990644	-1.14039E-06	0.027714413
ENSCAFT00000075315.1	Canis_familiaris.CanFam3.1.ncrna	-2.366132972	-1.71243E-06	0.000541528
ENSCAFT00000075332.1	Canis_familiaris.CanFam3.1.ncrna	-2.957356566	-6.85263E-07	0.025517467
ENSCAFT00000075334.1	Canis_familiaris.CanFam3.1.ncrna	-5.293425998	-1.01788E-06	8.8459E-05
ENSCAFT00000075367.1	Canis_familiaris.CanFam3.1.ncrna	-3.060098472	-2.81719E-06	1.37539E-08
ENSCAFT00000075377.1	Canis_familiaris.CanFam3.1.ncrna	-3.070301955	-6.02508E-06	8.37624E-17
ENSCAFT00000075394.1	Canis_familiaris.CanFam3.1.ncrna	-3.234847149	-6.98255E-07	0.019816953
ENSCAFT00000075504.1	Canis_familiaris.CanFam3.1.ncrna	-4.981997978	-9.79143E-06	2.2851E-53
ENSCAFT00000075520.1	Canis_familiaris.CanFam3.1.ncrna	-2.807595629	-2.13021E-06	0.000314967
ENSCAFT00000075577.1	Canis_familiaris.CanFam3.1.ncrna	-6.503416024	-2.88702E-05	2.04904E-93
ENSCAFT00000075645.1	Canis_familiaris.CanFam3.1.ncrna	-4.303506888	-2.48112E-05	1.40852E-67
ENSCAFT00000075777.1	Canis_familiaris.CanFam3.1.ncrna	-2.244406874	-3.0118E-06	3.40789E-06
ENSCAFT00000075810.1	Canis_familiaris.CanFam3.1.ncrna	-3.388091812	-1.91547E-06	8.29967E-07
ENSCAFT00000075895.1	Canis_familiaris.CanFam3.1.ncrna	-4.384432575	-2.58686E-06	9.32651E-11
ENSCAFT00000075934.1	Canis_familiaris.CanFam3.1.ncrna	-5.602190717	-1.09108E-06	3.58186E-05
ENSCAFT00000076043.1	Canis_familiaris.CanFam3.1.ncrna	-2.119303106	-5.60666E-05	0
ENSCAFT00000076060.1	Canis_familiaris.CanFam3.1.ncrna	-3.919475654	-1.38907E-05	1.78879E-59
ENSCAFT00000076067.1	Canis_familiaris.CanFam3.1.ncrna	-3.014805436	-3.05723E-06	1.89311E-09
ENSCAFT00000076362.1	Canis_familiaris.CanFam3.1.ncrna	-3.203196369	-6.33225E-06	1.00251E-12
ENSCAFT00000076408.1	Canis_familiaris.CanFam3.1.ncrna	-3.307823559	-6.37099E-06	3.38799E-21
ENSCAFT00000076462.1	Canis_familiaris.CanFam3.1.ncrna	-3.55122084	-3.58275E-06	1.59445E-12
ENSCAFT00000076464.1	Canis_familiaris.CanFam3.1.ncrna	-2.460602949	-2.16255E-06	0.000563631
ENSCAFT00000076467.1	Canis_familiaris.CanFam3.1.ncrna	-3.550596387	-4.73639E-06	1.00759E-16
ENSCAFT00000076516.1	Canis_familiaris.CanFam3.1.ncrna	-3.674510956	-1.21177E-05	6.96208E-43
ENSCAFT00000076559.1	Canis_familiaris.CanFam3.1.ncrna	-2.193262075	-1.45169E-06	0.001883491
ENSCAFT00000076599.1	Canis_familiaris.CanFam3.1.ncrna	-7.711970405	-2.78777E-05	1.3874E-161
ENSCAFT00000076606.1	Canis_familiaris.CanFam3.1.ncrna	-2.024106777	-1.12949E-06	0.025936637
ENSCAFT00000076684.1	Canis_familiaris.CanFam3.1.ncrna	-2.907676466	-4.11677E-06	2.3164E-12
ENSCAFT00000076755.1	Canis_familiaris.CanFam3.1.ncrna	-3.871364465	-6.95519E-06	2.24941E-24
ENSCAFT00000076822.1	Canis_familiaris.CanFam3.1.ncrna	-3.812596326	-3.10324E-06	1.14327E-11
ENSCAFT00000076871.1	Canis_familiaris.CanFam3.1.ncrna	-2.236547737	-3.73997E-06	9.72461E-09
ENSCAFT00000076937.1	Canis_familiaris.CanFam3.1.ncrna	-4.050173592	-3.9394E-06	1.93563E-15
ENSCAFT00000076980.1	Canis_familiaris.CanFam3.1.ncrna	-2.152665881	-2.7481E-06	3.10858E-06
ENSCAFT00000077006.1	Canis_familiaris.CanFam3.1.ncrna	-4.276372218	-8.05674E-06	3.36935E-31

ENSCAFT00000077090.1	Canis_familiaris.CanFam3.1.ncrna	-4.389358828	-2.07995E-06	7.70156E-09
ENSCAFT00000077107.1	Canis_familiaris.CanFam3.1.ncrna	-2.601648662	-9.82987E-07	0.009530589
ENSCAFT00000077111.1	Canis_familiaris.CanFam3.1.ncrna	-2.215442912	-1.24962E-06	0.007155169
ENSCAFT00000077232.1	Canis_familiaris.CanFam3.1.ncrna	-3.350480052	-2.50547E-06	2.85985E-08
ENSCAFT00000077242.1	Canis_familiaris.CanFam3.1.ncrna	-14.83007884	-1.71617E-06	5.21135E-11
ENSCAFT00000077297.1	Canis_familiaris.CanFam3.1.ncrna	-8.436624763	-7.17833E-05	2.85674E-41
ENSCAFT00000077337.1	Canis_familiaris.CanFam3.1.ncrna	-2.699404276	-1.23509E-06	0.0014426
ENSCAFT00000077348.1	Canis_familiaris.CanFam3.1.ncrna	-3.782109047	-1.81281E-06	0.000974772
ENSCAFT00000077363.1	Canis_familiaris.CanFam3.1.ncrna	-2.245971162	-1.8445E-06	0.000295308
ENSCAFT00000077398.1	Canis_familiaris.CanFam3.1.ncrna	-3.307553227	-3.06337E-06	2.45338E-07
ENSCAFT00000077401.1	Canis_familiaris.CanFam3.1.ncrna	-3.098550848	-1.12995E-06	0.000918102
ENSCAFT00000077410.1	Canis_familiaris.CanFam3.1.ncrna	-3.392746388	-8.4064E-06	5.33114E-14
ENSCAFT00000077456.1	Canis_familiaris.CanFam3.1.ncrna	-2.959310819	-1.20269E-06	0.001015466
ENSCAFT00000077464.1	Canis_familiaris.CanFam3.1.ncrna	-2.88799762	-6.60975E-07	0.036726943
ENSCAFT00000077489.1	Canis_familiaris.CanFam3.1.ncrna	-2.983700131	-7.69251E-07	0.019992478
ENSCAFT00000077495.1	Canis_familiaris.CanFam3.1.ncrna	-3.007265869	-8.53919E-07	0.008659385
ENSCAFT00000077651.1	Canis_familiaris.CanFam3.1.ncrna	-29.16194088	-4.55596E-06	4.25283E-32
ENSCAFT00000077671.1	Canis_familiaris.CanFam3.1.ncrna	-4.443929128	-5.09946E-06	6.30466E-17
ENSCAFT00000077760.1	Canis_familiaris.CanFam3.1.ncrna	-8.850068068	-1.56577E-06	7.64951E-09
ENSCAFT00000077843.1	Canis_familiaris.CanFam3.1.ncrna	-2.014092595	-1.2336E-06	0.013383759
ENSCAFT00000077850.1	Canis_familiaris.CanFam3.1.ncrna	-4.65129614	-1.65451E-05	5.2677E-102
ENSCAFT00000077851.1	Canis_familiaris.CanFam3.1.ncrna	-3.503028834	-6.62782E-06	3.54216E-23
ENSCAFT00000077890.1	Canis_familiaris.CanFam3.1.ncrna	-2.347528233	-1.18229E-06	0.006340102
ENSCAFT00000077925.1	Canis_familiaris.CanFam3.1.ncrna	-2.794031521	-1.57406E-06	9.84332E-05
ENSCAFT00000077952.1	Canis_familiaris.CanFam3.1.ncrna	-2.849966909	-2.31958E-06	1.57803E-06
ENSCAFT00000077971.1	Canis_familiaris.CanFam3.1.ncrna	-2.706655465	-2.58931E-06	2.00578E-07
ENSCAFT00000078018.1	Canis_familiaris.CanFam3.1.ncrna	-2.184020695	-9.05027E-07	0.036099695
ENSCAFT00000078029.1	Canis_familiaris.CanFam3.1.ncrna	-6.521406574	-4.76785E-05	2.44523E-28
ENSCAFT00000078047.1	Canis_familiaris.CanFam3.1.ncrna	-2.794922077	-1.98016E-06	5.37109E-06
ENSCAFT00000078066.1	Canis_familiaris.CanFam3.1.ncrna	-2.863346605	-5.07964E-06	1.6135E-11
ENSCAFT00000078082.1	Canis_familiaris.CanFam3.1.ncrna	-6.066732072	-3.11096E-06	2.6107E-13
ENSCAFT00000078162.1	Canis_familiaris.CanFam3.1.ncrna	-4.915868623	-2.12806E-05	2.8643E-121
ENSCAFT00000078235.1	Canis_familiaris.CanFam3.1.ncrna	-2.150459958	-8.79458E-07	0.042918052
ENSCAFT00000078337.1	Canis_familiaris.CanFam3.1.ncrna	-6.692176867	-2.20712E-06	6.11511E-11
ENSCAFT00000078377.1	Canis_familiaris.CanFam3.1.ncrna	-2.436286722	-4.01908E-06	2.98396E-10
ENSCAFT00000078399.1	Canis_familiaris.CanFam3.1.ncrna	-5.06066627	-3.25712E-06	1.46496E-14
ENSCAFT00000078412.1	Canis_familiaris.CanFam3.1.ncrna	-3.856831696	-7.84974E-07	0.004511813
ENSCAFT00000078415.1	Canis_familiaris.CanFam3.1.ncrna	-6.77657279	-3.00941E-05	1.48363E-92
ENSCAFT00000078430.1	Canis_familiaris.CanFam3.1.ncrna	-4.233031226	-4.51737E-06	2.88391E-06
ENSCAFT00000078449.1	Canis_familiaris.CanFam3.1.ncrna	-15.14009732	-2.28728E-06	1.03699E-14
ENSCAFT00000078497.1	Canis_familiaris.CanFam3.1.ncrna	-6.389528212	-3.47718E-05	1.29459E-62
ENSCAFT00000078520.1	Canis_familiaris.CanFam3.1.ncrna	-2.185952935	-5.50928E-06	1.03231E-11
ENSCAFT00000078524.1	Canis_familiaris.CanFam3.1.ncrna	-2.87213217	-2.13636E-06	1.36561E-06
ENSCAFT00000078532.1	Canis_familiaris.CanFam3.1.ncrna	-3.286107498	-2.43451E-06	4.79678E-07
ENSCAFT00000078585.1	Canis_familiaris.CanFam3.1.ncrna	-2.750741237	-1.40361E-06	0.000352175
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ENSCAFT00000078639.1	Canis_familiaris.CanFam3.1.ncrna	-2.762702329	-8.16293E-07	0.015741249
ENSCAFT00000078849.1	Canis_familiaris.CanFam3.1.ncrna	-3.137804543	-2.51948E-06	1.30153E-07
ENSCAFT00000078859.1	Canis_familiaris.CanFam3.1.ncrna	-6.849361401	-4.12626E-05	5.29398E-55
ENSCAFT00000078888.1	Canis_familiaris.CanFam3.1.ncrna	-3.349799334	-3.56661E-06	3.65092E-12
ENSCAFT00000078900.1	Canis_familiaris.CanFam3.1.ncrna	-2.867368815	-2.34176E-06	3.51729E-07
ENSCAFT00000078926.1	Canis_familiaris.CanFam3.1.ncrna	-6.418518357	-8.01861E-06	2.26438E-46
ENSCAFT00000078991.1	Canis_familiaris.CanFam3.1.ncrna	-4.064368624	-2.80368E-06	9.71019E-11
ENSCAFT00000079102.1	Canis_familiaris.CanFam3.1.ncrna	-2.043298964	-1.66191E-06	0.001547529
ENSCAFT00000079122.1	Canis_familiaris.CanFam3.1.ncrna	-2.03969804	-1.18633E-06	0.011893791
ENSCAFT00000079217.1	Canis_familiaris.CanFam3.1.ncrna	-5.940401917	-3.00121E-05	3.21179E-94
ENSCAFT00000079247.1	Canis_familiaris.CanFam3.1.ncrna	-2.414876334	-2.30683E-06	4.35692E-06
ENSCAFT00000079253.1	Canis_familiaris.CanFam3.1.ncrna	-5.680797756	-1.41626E-05	1.61982E-67
ENSCAFT00000079262.1	Canis_familiaris.CanFam3.1.ncrna	-2.518889417	-1.44727E-06	0.000666862
ENSCAFT00000079334.1	Canis_familiaris.CanFam3.1.ncrna	-6.094125708	-3.88595E-06	6.80268E-12
ENSCAFT00000079395.1	Canis_familiaris.CanFam3.1.ncrna	-3.311547211	-7.22329E-07	0.014491264
ENSCAFT00000079471.1	Canis_familiaris.CanFam3.1.ncrna	-2.488338218	-4.22132E-06	3.62585E-11
ENSCAFT00000079534.1	Canis_familiaris.CanFam3.1.ncrna	-3.073985415	-2.21105E-06	1.39417E-06
ENSCAFT00000079539.1	Canis_familiaris.CanFam3.1.ncrna	-2.967735966	-2.69075E-06	2.08618E-08
ENSCAFT00000079585.1	Canis_familiaris.CanFam3.1.ncrna	-2.666709516	-2.02856E-06	0.001027894
ENSCAFT00000079599.1	Canis_familiaris.CanFam3.1.ncrna	-2.183346922	-9.04452E-07	0.030590723
ENSCAFT00000079743.1	Canis_familiaris.CanFam3.1.ncrna	-2.468250346	-1.675E-06	0.000163078
ENSCAFT00000079744.1	Canis_familiaris.CanFam3.1.ncrna	-2.041565516	-5.97388E-06	2.44949E-08
ENSCAFT00000079796.1	Canis_familiaris.CanFam3.1.ncrna	-4.354662856	-8.25355E-06	2.2775E-34
ENSCAFT00000079861.1	Canis_familiaris.CanFam3.1.ncrna	-7.559312764	-7.73132E-06	1.84493E-54
ENSCAFT00000079898.1	Canis_familiaris.CanFam3.1.ncrna	-2.18516662	-1.26305E-06	0.006759929
ENSCAFT00000079954.1	Canis_familiaris.CanFam3.1.ncrna	-3.384812111	-1.55358E-06	2.51753E-05
ENSCAFT00000080086.1	Canis_familiaris.CanFam3.1.ncrna	-2.710586599	-1.82281E-06	2.30339E-05
ENSCAFT00000080131.1	Canis_familiaris.CanFam3.1.ncrna	-2.411112581	-1.87598E-06	7.23909E-05
ENSCAFT00000080148.1	Canis_familiaris.CanFam3.1.ncrna	-2.440494299	-2.29454E-06	5.05315E-06
ENSCAFT00000080156.1	Canis_familiaris.CanFam3.1.ncrna	-2.233581104	-2.33674E-06	1.29727E-05
ENSCAFT00000080195.1	Canis_familiaris.CanFam3.1.ncrna	-2.325806451	-1.26348E-06	0.026018902
ENSCAFT00000080228.1	Canis_familiaris.CanFam3.1.ncrna	-2.91792301	-1.32149E-06	0.000411398
ENSCAFT00000080235.1	Canis_familiaris.CanFam3.1.ncrna	-3.512269043	-8.79652E-07	0.005418754
ENSCAFT00000080238.1	Canis_familiaris.CanFam3.1.ncrna	-2.936064787	-1.26102E-06	0.000588618
ENSCAFT00000080385.1	Canis_familiaris.CanFam3.1.ncrna	-4.783292653	-2.34065E-05	1.3173E-138
ENSCAFT00000080416.1	Canis_familiaris.CanFam3.1.ncrna	-3.621733931	-3.18882E-06	6.89258E-11
ENSCAFT00000080420.1	Canis_familiaris.CanFam3.1.ncrna	-5.731861953	-1.51976E-05	3.22603E-52
ENSCAFT00000080435.1	Canis_familiaris.CanFam3.1.ncrna	-2.936057929	-6.5131E-06	7.24252E-18
ENSCAFT00000080467.1	Canis_familiaris.CanFam3.1.ncrna	-2.276084159	-2.22987E-06	0.009207432
ENSCAFT00000080486.1	Canis_familiaris.CanFam3.1.ncrna	-2.73152866	-1.25842E-06	0.0012747
ENSCAFT00000080530.1	Canis_familiaris.CanFam3.1.ncrna	-6.626448542	-1.97731E-05	7.9483E-119
ENSCAFT00000080638.1	Canis_familiaris.CanFam3.1.ncrna	-6.701304025	-2.21886E-05	2.5572E-135
ENSCAFT00000080644.1	Canis_familiaris.CanFam3.1.ncrna	-2.918431541	-1.17737E-06	0.001265595
ENSCAFT00000080675.1	Canis_familiaris.CanFam3.1.ncrna	-2.992419617	-9.97576E-07	0.004940214
ENSCAFT00000080702.1	Canis_familiaris.CanFam3.1.ncrna	-2.551939977	-7.18369E-07	0.046109098
ENSCAFT00000080724.1	Canis_familiaris.CanFam3.1.ncrna	-3.397000267	-2.19313E-06	7.73036E-08
ENSCAFT00000080769.1	Canis_familiaris.CanFam3.1.ncrna	-4.342667985	-3.68721E-06	4.43749E-15
ENSCAFT00000080778.1	Canis_familiaris.CanFam3.1.ncrna	-6.974162969	-1.13147E-05	7.25844E-74
ENSCAFT00000080828.1	Canis_familiaris.CanFam3.1.ncrna	-6.414803706	-1.07985E-06	1.96467E-05
ENSCAFT00000080974.1	Canis_familiaris.CanFam3.1.ncrna	-6.219854995	-2.81138E-06	5.09435E-11
ENSCAFT00000080987.1	Canis_familiaris.CanFam3.1.ncrna	-4.025545587	-1.40103E-06	1.24043E-05
ENSCAFT00000081080.1	Canis_familiaris.CanFam3.1.ncrna	-3.125517581	-4.66684E-06	3.37007E-15
ENSCAFT00000081124.1	Canis_familiaris.CanFam3.1.ncrna	-2.320844131	-2.0044E-06	4.50154E-05
ENSCAFT00000081187.1	Canis_familiaris.CanFam3.1.ncrna	-3.669909705	-3.87389E-05	2.26282E-59

ENSCAFT00000081209.1	Canis_familiaris.CanFam3.1.ncrna	-2.457049655	-7.29609E-07	0.049287823
ENSCAFT00000081290.1	Canis_familiaris.CanFam3.1.ncrna	-4.190135431	-1.67376E-05	1.6783E-101
ENSCAFT00000081427.1	Canis_familiaris.CanFam3.1.ncrna	-2.687471459	-1.79828E-06	2.62255E-05
ENSCAFT00000081452.1	Canis_familiaris.CanFam3.1.ncrna	-2.497088459	-2.21622E-06	1.8505E-05
ENSCAFT00000081609.1	Canis_familiaris.CanFam3.1.ncrna	-2.056713641	-1.68362E-06	0.001223126
ENSCAFT00000081629.1	Canis_familiaris.CanFam3.1.ncrna	-2.983024034	-7.69001E-07	0.019940172
ENSCAFT00000081648.1	Canis_familiaris.CanFam3.1.ncrna	-3.193256005	-2.08961E-06	1.20587E-05
ENSCAFT00000081662.1	Canis_familiaris.CanFam3.1.ncrna	-2.299126193	-2.8047E-06	2.70836E-06
ENSCAFT00000081683.1	Canis_familiaris.CanFam3.1.ncrna	-2.122077776	-1.15356E-06	0.013559905
ENSCAFT00000081690.1	Canis_familiaris.CanFam3.1.ncrna	-4.209740393	-8.81878E-07	0.001303261
ENSCAFT00000081750.1	Canis_familiaris.CanFam3.1.ncrna	-6.606830452	-2.5969E-06	1.30345E-12
ENSCAFT00000081777.1	Canis_familiaris.CanFam3.1.ncrna	-3.373819639	-5.29901E-06	1.14059E-14
ENSCAFT00000081801.1	Canis_familiaris.CanFam3.1.ncrna	-3.099864108	-1.45756E-05	3.31112E-55
ENSCAFT00000081875.1	Canis_familiaris.CanFam3.1.ncrna	-7.625390589	-2.31925E-06	2.31968E-12
ENSCAFT00000081961.1	Canis_familiaris.CanFam3.1.ncrna	-10.07927636	-2.74634E-05	9.5639E-151
ENSCAFT00000081966.1	Canis_familiaris.CanFam3.1.ncrna	-3.791794973	-1.71342E-06	1.73794E-06
ENSCAFT00000082043.1	Canis_familiaris.CanFam3.1.ncrna	-2.517894723	-1.90345E-06	3.24634E-05
ENSCAFT00000082071.1	Canis_familiaris.CanFam3.1.ncrna	-2.34029005	-2.48801E-06	1.43403E-05
ENSCAFT00000082184.1	Canis_familiaris.CanFam3.1.ncrna	-2.154353807	-1.14339E-06	0.010792854
ENSCAFT00000082230.1	Canis_familiaris.CanFam3.1.ncrna	-2.512069362	-8.14163E-07	0.028496531
ENSCAFT00000082236.1	Canis_familiaris.CanFam3.1.ncrna	-3.803468274	-7.84456E-06	1.18496E-28
ENSCAFT00000082310.1	Canis_familiaris.CanFam3.1.ncrna	-2.857212914	-7.20167E-07	0.040316739
ENSCAFT00000082348.1	Canis_familiaris.CanFam3.1.ncrna	-2.647657786	-2.9969E-06	3.02309E-08
ENSCAFT00000082357.1	Canis_familiaris.CanFam3.1.ncrna	-2.491295878	-2.48816E-06	1.10169E-06
ENSCAFT00000082373.1	Canis_familiaris.CanFam3.1.ncrna	-9.192654705	-3.4339E-05	3.2198E-83
ENSCAFT00000082439.1	Canis_familiaris.CanFam3.1.ncrna	-3.012024005	-1.53809E-06	7.84064E-05
ENSCAFT00000082456.1	Canis_familiaris.CanFam3.1.ncrna	-2.71938992	-1.05533E-06	0.004800319
ENSCAFT00000082467.1	Canis_familiaris.CanFam3.1.ncrna	-3.145271797	-3.41808E-06	4.68228E-11
ENSCAFT00000082471.1	Canis_familiaris.CanFam3.1.ncrna	-4.719079735	-8.92574E-05	1.9614E-154
ENSCAFT00000082573.1	Canis_familiaris.CanFam3.1.ncrna	-7.195323227	-4.48978E-06	6.193E-13
ENSCAFT00000082604.1	Canis_familiaris.CanFam3.1.ncrna	-4.371003218	-5.36979E-06	9.78014E-19
ENSCAFT00000082665.1	Canis_familiaris.CanFam3.1.ncrna	-5.892438975	-1.79273E-05	8.24934E-96
ENSCAFT00000082671.1	Canis_familiaris.CanFam3.1.ncrna	-7.547205601	-2.74492E-05	1.1462E-162
ENSCAFT00000082729.1	Canis_familiaris.CanFam3.1.ncrna	-2.624868386	-1.60735E-06	0.000728483
ENSCAFT00000082782.1	Canis_familiaris.CanFam3.1.ncrna	-2.98307006	-7.68899E-07	0.020594925
ENSCAFT00000082896.1	Canis_familiaris.CanFam3.1.ncrna	-3.164785257	-7.57925E-07	0.022739291
ENSCAFT00000082908.1	Canis_familiaris.CanFam3.1.ncrna	-2.506640761	-1.20846E-06	0.001981816
ENSCAFT00000082936.1	Canis_familiaris.CanFam3.1.ncrna	-6.206998158	-5.04679E-05	1.04705E-61
ENSCAFT00000083037.1	Canis_familiaris.CanFam3.1.ncrna	-4.426410522	-2.74927E-06	1.16672E-10
ENSCAFT00000083054.1	Canis_familiaris.CanFam3.1.ncrna	-4.742750339	-1.76603E-05	1.7173E-106
ENSCAFT00000083081.1	Canis_familiaris.CanFam3.1.ncrna	-3.86232682	-1.86812E-05	2.19095E-90
ENSCAFT00000083110.1	Canis_familiaris.CanFam3.1.ncrna	-3.402276573	-3.28732E-06	1.26957E-08
ENSCAFT00000083170.1	Canis_familiaris.CanFam3.1.ncrna	-6.630306344	-1.33496E-06	5.84949E-07
ENSCAFT00000083214.1	Canis_familiaris.CanFam3.1.ncrna	-2.615674919	-1.84354E-06	2.82747E-05
ENSCAFT00000083316.1	Canis_familiaris.CanFam3.1.ncrna	-2.956671569	-6.85022E-07	0.025228179
ENSCAFT00000083342.1	Canis_familiaris.CanFam3.1.ncrna	-2.858229962	-1.70133E-06	0.000111674
ENSCAFT00000083394.1	Canis_familiaris.CanFam3.1.ncrna	-3.510713201	-3.33798E-06	8.97832E-12
ENSCAFT00000083447.1	Canis_familiaris.CanFam3.1.ncrna	-3.384771486	-7.48337E-06	3.72931E-24
ENSCAFT00000083479.1	Canis_familiaris.CanFam3.1.ncrna	-4.197040878	-5.9357E-06	5.89582E-23
ENSCAFT00000083504.1	Canis_familiaris.CanFam3.1.ncrna	-2.388917029	-2.15296E-06	0.011855888
ENSCAFT00000083539.1	Canis_familiaris.CanFam3.1.ncrna	-4.777875771	-5.73349E-06	3.6467E-24
ENSCAFT00000083551.1	Canis_familiaris.CanFam3.1.ncrna	-2.568773795	-1.37639E-06	0.000720069
ENSCAFT00000083740.1	Canis_familiaris.CanFam3.1.ncrna	-4.780990097	-1.22899E-05	6.32978E-66
ENSCAFT00000083799.1	Canis_familiaris.CanFam3.1.ncrna	-2.825015486	-5.58683E-06	2.72617E-15
ENSCAFT00000083852.1	Canis_familiaris.CanFam3.1.ncrna	-3.109732262	-8.18127E-07	0.009605391
ENSCAFT00000083900.1	Canis_familiaris.CanFam3.1.ncrna	-5.483044283	-2.92009E-06	2.09979E-13
ENSCAFT00000083990.1	Canis_familiaris.CanFam3.1.ncrna	-3.504691948	-6.06547E-06	3.09909E-19
ENSCAFT00000084007.1	Canis_familiaris.CanFam3.1.ncrna	-2.892109105	-1.87332E-06	1.29118E-05
ENSCAFT00000084019.1	Canis_familiaris.CanFam3.1.ncrna	-4.585970587	-2.0299E-05	5.1843E-123
ENSCAFT00000084030.1	Canis_familiaris.CanFam3.1.ncrna	-2.212142455	-1.56581E-06	0.006821593
ENSCAFT00000084134.1	Canis_familiaris.CanFam3.1.ncrna	-3.654202968	-9.29315E-07	0.002553356
ENSCAFT00000084135.1	Canis_familiaris.CanFam3.1.ncrna	-4.162398827	-7.49782E-07	0.007500287
ENSCAFT00000084213.1	Canis_familiaris.CanFam3.1.ncrna	-19.62140403	-0.00033129	0
ENSCAFT00000084248.1	Canis_familiaris.CanFam3.1.ncrna	-6.58454752	-2.95101E-05	3.13715E-87
ENSCAFT00000084287.1	Canis_familiaris.CanFam3.1.ncrna	-2.082371282	-1.60203E-06	0.00166819
ENSCAFT00000084350.1	Canis_familiaris.CanFam3.1.ncrna	-3.097099354	-1.84386E-06	0.000536287
ENSCAFT00000084417.1	Canis_familiaris.CanFam3.1.ncrna	-5.171188716	-8.84515E-06	3.60682E-41
ENSCAFT00000084431.1	Canis_familiaris.CanFam3.1.ncrna	-3.507488235	-1.35022E-06	8.016E-05
ENSCAFT00000084481.1	Canis_familiaris.CanFam3.1.ncrna	-3.091151405	-5.30127E-06	1.43526E-16
ENSCAFT00000084495.1	Canis_familiaris.CanFam3.1.ncrna	-2.848993409	-1.97271E-06	7.84064E-05
ENSCAFT00000084548.1	Canis_familiaris.CanFam3.1.ncrna	-2.057622633	-2.88055E-06	4.09642E-05
ENSCAFT00000084589.1	Canis_familiaris.CanFam3.1.ncrna	-6.404879006	-1.41061E-05	3.33247E-93
ENSCAFT00000084705.1	Canis_familiaris.CanFam3.1.ncrna	-2.37540789	-1.05137E-06	0.011046197
ENSCAFT00000084722.1	Canis_familiaris.CanFam3.1.ncrna	-3.306029821	-2.45732E-06	2.28354E-08
ENSCAFT00000084764.1	Canis_familiaris.CanFam3.1.ncrna	-2.138011875	-2.06998E-06	8.95126E-05
ENSCAFT00000084844.1	Canis_familiaris.CanFam3.1.ncrna	-3.951332785	-1.07145E-05	4.52504E-23
ENSCAFT00000084861.1	Canis_familiaris.CanFam3.1.ncrna	-3.152887618	-3.6713E-06	9.22028E-12
ENSCAFT00000084869.1	Canis_familiaris.CanFam3.1.ncrna	-4.767242972	-6.57168E-06	6.73841E-24
ENSCAFT00000084878.1	Canis_familiaris.CanFam3.1.ncrna	-6.027048435	-2.70669E-06	1.96824E-09
ENSCAFT00000084965.1	Canis_familiaris.CanFam3.1.ncrna	-3.60262664	-9.54091E-06	1.81498E-29
ENSCAFT00000084976.1	Canis_familiaris.CanFam3.1.ncrna	-2.694073294	-2.56988E-06	1.11256E-06
ENSCAFT00000085002.1	Canis_familiaris.CanFam3.1.ncrna	-2.129023815	-2.56389E-06	2.51236E-05
ENSCAFT00000085004.1	Canis_familiaris.CanFam3.1.ncrna	-2.836387852	-8.39027E-06	1.12088E-23
ENSCAFT00000085056.1	Canis_familiaris.CanFam3.1.ncrna	-3.290920211	-4.16738E-06	3.95947E-14
ENSCAFT00000085086.1	Canis_familiaris.CanFam3.1.ncrna	-2.30038129	-8.4697E-07	0.048714906
ENSCAFT00000085089.1	Canis_familiaris.CanFam3.1.ncrna	-2.262635504	-1.77273E-06	0.000802635
ENSCAFT00000085241.1	Canis_familiaris.CanFam3.1.ncrna	-5.638004338	-2.29362E-05	2.8183E-124
ENSCAFT00000085248.1	Canis_familiaris.CanFam3.1.ncrna	-4.148569697	-5.61423E-06	2.56455E-11
ENSCAFT00000085283.1	Canis_familiaris.CanFam3.1.ncrna	-6.280470087	-2.17384E-05	4.9557E-139
ENSCAFT00000085301.1	Canis_familiaris.CanFam3.1.ncrna	-5.594999451	-1.89135E-05	3.1835E-120
ENSCAFT00000085331.1	Canis_familiaris.CanFam3.1.ncrna	-5.317233066	-1.84169E-05	6.82E-112
ENSCAFT00000085347.1	Canis_familiaris.CanFam3.1.ncrna	-2.170263014	-1.07094E-06	0.015809831
ENSCAFT00000085356.1	Canis_familiaris.CanFam3.1.ncrna	-4.509924606	-1.85554E-05	7.16861E-23
ENSCAFT00000085472.1	Canis_familiaris.CanFam3.1.ncrna	-2.535386472	-1.17373E-06	0.003376769
ENSCAFT00000085474.1	Canis_familiaris.CanFam3.1.ncrna	-6.573435515	-6.91694E-07	0.001940598
ENSCAFT00000085578.1	Canis_familiaris.CanFam3.1.ncrna	-5.965532326	-1.27776E-05	1.99515E-66
ENSCAFT00000085624.1	Canis_familiaris.CanFam3.1.ncrna	-2.592832257	-5.71659E-06	6.41643E-15
ENSCAFT00000085639.1	Canis_familiaris.CanFam3.1.ncrna	-2.434563544	-1.69527E-06	0.020531289
ENSCAFT00000085683.1	Canis_familiaris.CanFam3.1.ncrna	-4.100127421	-9.68685E-07	0.001766727
ENSCAFT00000085697.1	Canis_familiaris.CanFam3.1.ncrna	-5.438317849	-9.24368E-06	1.80639E-38

ENSCAFT00000085897.1	Canis_familiaris.CanFam3.1.ncrna	-3.879107791	-8.48863E-06	7.06752E-23
ENSCAFT00000086136.1	Canis_familiaris.CanFam3.1.ncrna	-5.095596492	-1.17672E-05	1.81135E-62
ENSCAFT00000086171.1	Canis_familiaris.CanFam3.1.ncrna	-3.378403069	-1.08606E-05	9.98796E-25
ENSCAFT00000086219.1	Canis_familiaris.CanFam3.1.ncrna	-4.816264679	-4.06672E-06	2.08691E-17
ENSCAFT00000086220.1	Canis_familiaris.CanFam3.1.ncrna	-31.43824206	-1.1797E-05	1.12544E-64
ENSCAFT00000086272.1	Canis_familiaris.CanFam3.1.ncrna	-14.9696549	-2.75195E-05	4.2249E-182
ENSCAFT00000086350.1	Canis_familiaris.CanFam3.1.ncrna	-2.166735401	-1.99255E-06	0.001630665
ENSCAFT00000086413.1	Canis_familiaris.CanFam3.1.ncrna	-3.150778659	-8.68484E-06	1.52651E-11
ENSCAFT00000086445.1	Canis_familiaris.CanFam3.1.ncrna	-2.106268644	-1.55448E-06	0.003585685
ENSCAFT00000086468.1	Canis_familiaris.CanFam3.1.ncrna	-2.230880785	-2.88763E-06	2.54619E-06
ENSCAFT00000086566.1	Canis_familiaris.CanFam3.1.ncrna	-6.208309465	-3.45862E-05	4.403E-110
ENSCAFT00000086587.1	Canis_familiaris.CanFam3.1.ncrna	-3.923649773	-1.09363E-05	5.18424E-18
ENSCAFT00000086625.1	Canis_familiaris.CanFam3.1.ncrna	-3.279711636	-4.65915E-06	1.16047E-07
ENSCAFT00000086647.1	Canis_familiaris.CanFam3.1.ncrna	-2.616487961	-2.51355E-06	5.55812E-06
ENSCAFT00000086779.1	Canis_familiaris.CanFam3.1.ncrna	-5.714919362	-4.31524E-06	1.06543E-19
ENSCAFT00000086830.1	Canis_familiaris.CanFam3.1.ncrna	-2.468570947	-0.00059583	0
ENSCAFT00000086900.1	Canis_familiaris.CanFam3.1.ncrna	-3.138697502	-7.0332E-06	5.7992E-21
ENSCAFT00000086925.1	Canis_familiaris.CanFam3.1.ncrna	-3.636752198	-7.97127E-06	1.13444E-24
ENSCAFT00000086990.1	Canis_familiaris.CanFam3.1.ncrna	-5.071134029	-3.10174E-05	1.30233E-97
ENSCAFT00000087010.1	Canis_familiaris.CanFam3.1.ncrna	-2.408216675	-7.01709E-06	2.55198E-16
ENSCAFT00000087180.1	Canis_familiaris.CanFam3.1.ncrna	-4.959441447	-5.71171E-06	1.41885E-15
ENSCAFT00000087183.1	Canis_familiaris.CanFam3.1.ncrna	-4.842300601	-5.82955E-06	1.75943E-21
ENSCAFT00000087238.1	Canis_familiaris.CanFam3.1.ncrna	-2.532711464	-2.34531E-05	3.97203E-59
ENSCAFT00000087246.1	Canis_familiaris.CanFam3.1.ncrna	-7.414417076	-3.8725E-05	1.76613E-68
ENSCAFT00000087309.1	Canis_familiaris.CanFam3.1.ncrna	-4.06825388	-2.57754E-06	7.74623E-09
ENSCAFT00000087404.1	Canis_familiaris.CanFam3.1.ncrna	-3.977957859	-2.83727E-06	9.73712E-11
ENSCAFT00000087408.1	Canis_familiaris.CanFam3.1.ncrna	-17.25027917	-1.36476E-05	3.08306E-68
ENSCAFT00000087624.1	Canis_familiaris.CanFam3.1.ncrna	-3.076108231	-3.62341E-06	1.6048E-09
ENSCAFT00000087662.1	Canis_familiaris.CanFam3.1.ncrna	-3.012206239	-1.31061E-06	0.000274967
ENSCAFT00000087679.1	Canis_familiaris.CanFam3.1.ncrna	-4.132977719	-1.39542E-05	1.29397E-33
ENSCAFT00000087736.1	Canis_familiaris.CanFam3.1.ncrna	-2.834513607	-7.80589E-07	0.017807338
ENSCAFT00000087757.1	Canis_familiaris.CanFam3.1.ncrna	-2.683435232	-2.3655E-06	0.000965419
ENSCAFT00000087782.1	Canis_familiaris.CanFam3.1.ncrna	-2.843771778	-2.17329E-06	1.25413E-06
ENSCAFT00000087901.1	Canis_familiaris.CanFam3.1.ncrna	-2.435171724	-1.52933E-06	0.000464802
ENSCAFT00000087907.1	Canis_familiaris.CanFam3.1.ncrna	-2.207780605	-3.2894E-06	2.40667E-07
ENSCAFT00000087930.1	Canis_familiaris.CanFam3.1.ncrna	-2.399226126	-1.91288E-06	5.19015E-05
ENSCAFT00000087947.1	Canis_familiaris.CanFam3.1.ncrna	-5.57390907	-3.3301E-05	3.5996E-106
ENSCAFT00000087988.1	Canis_familiaris.CanFam3.1.ncrna	-2.948463576	-2.15001E-06	1.00283E-06
ENSCAFT00000087998.1	Canis_familiaris.CanFam3.1.ncrna	-2.802041463	-1.92036E-06	6.94726E-06
ENSCAFT00000088061.1	Canis_familiaris.CanFam3.1.ncrna	-2.243797179	-1.18472E-06	0.013541037
ENSCAFT00000088078.1	Canis_familiaris.CanFam3.1.ncrna	-3.097077414	-7.34165E-07	0.012424469
ENSCAFT00000088084.1	Canis_familiaris.CanFam3.1.ncrna	-4.399632733	-6.31181E-06	1.6938E-22
ENSCAFT00000088099.1	Canis_familiaris.CanFam3.1.ncrna	-2.740420949	-1.78928E-06	5.29028E-05
ENSCAFT00000088144.1	Canis_familiaris.CanFam3.1.ncrna	-4.209188047	-3.29859E-06	1.94947E-13
ENSCAFT00000088148.1	Canis_familiaris.CanFam3.1.ncrna	-3.037146047	-5.85249E-06	7.75516E-16
ENSCAFT00000088150.1	Canis_familiaris.CanFam3.1.ncrna	-3.012231665	-4.79734E-06	5.03692E-15
ENSCAFT00000088255.1	Canis_familiaris.CanFam3.1.ncrna	-2.814649828	-8.404E-07	0.010654756
ENSCAFT00000088264.1	Canis_familiaris.CanFam3.1.ncrna	-2.06319437	-2.8947E-06	3.15459E-06
ENSCAFT00000088289.1	Canis_familiaris.CanFam3.1.ncrna	-3.132318555	-1.8712E-06	1.66029E-05
ENSCAFT00000088300.1	Canis_familiaris.CanFam3.1.ncrna	-2.734083415	-2.43591E-06	3.55454E-07
ENSCAFT00000088311.1	Canis_familiaris.CanFam3.1.ncrna	-8.45165504	-3.17003E-06	1.57799E-17
ENSCAFT00000088344.1	Canis_familiaris.CanFam3.1.ncrna	-3.022011274	-1.62175E-06	3.68133E-05
ENSCAFT00000088368.1	Canis_familiaris.CanFam3.1.ncrna	-5.632083993	-3.19001E-06	7.84613E-11
ENSCAFT00000088523.1	Canis_familiaris.CanFam3.1.ncrna	-6.046625865	-3.02842E-05	1.4531E-94
ENSCAFT00000088540.1	Canis_familiaris.CanFam3.1.ncrna	-2.225667365	-1.02865E-06	0.030883835
ENSCAFT00000088571.1	Canis_familiaris.CanFam3.1.ncrna	-2.440977572	-8.84276E-07	0.02279379
ENSCAFT00000088578.1	Canis_familiaris.CanFam3.1.ncrna	-2.04065107	-2.2063E-06	0.00014636
ENSCAFT00000088601.1	Canis_familiaris.CanFam3.1.ncrna	-2.285892653	-1.41884E-06	0.001997049
ENSCAFT00000088632.1	Canis_familiaris.CanFam3.1.ncrna	-2.161718589	-9.75625E-07	0.027157191
ENSCAFT00000088639.1	Canis_familiaris.CanFam3.1.ncrna	-2.55935438	-1.77989E-06	0.001029451
ENSCAFT00000088692.1	Canis_familiaris.CanFam3.1.ncrna	-5.326129533	-1.03137E-05	5.34784E-55
ENSCAFT00000088735.1	Canis_familiaris.CanFam3.1.ncrna	-3.220420666	-1.16501E-05	1.23762E-34
ENSCAFT00000088756.1	Canis_familiaris.CanFam3.1.ncrna	-2.730140028	-2.16966E-06	2.40287E-06
ENSCAFT00000088776.1	Canis_familiaris.CanFam3.1.ncrna	-2.877612179	-1.78905E-06	1.21944E-05
ENSCAFT00000088799.1	Canis_familiaris.CanFam3.1.ncrna	-2.403362455	-1.23146E-06	0.003518244
ENSCAFT00000088853.1	Canis_familiaris.CanFam3.1.ncrna	-3.409270955	-1.02303E-06	0.021848561
ENSCAFT00000088981.1	Canis_familiaris.CanFam3.1.ncrna	-3.055600014	-1.10685E-06	0.000918948
ENSCAFT00000089072.1	Canis_familiaris.CanFam3.1.ncrna	-3.338470273	-5.57485E-06	1.30277E-18
ENSCAFT00000089092.1	Canis_familiaris.CanFam3.1.ncrna	-9.097902735	-1.92007E-06	4.82425E-11
ENSCAFT00000089107.1	Canis_familiaris.CanFam3.1.ncrna	-5.297357625	-4.58012E-06	5.8474E-20
ENSCAFT00000089108.1	Canis_familiaris.CanFam3.1.ncrna	-6.221788555	-2.83777E-05	2.0197E-160
ENSCAFT00000089158.1	Canis_familiaris.CanFam3.1.ncrna	-2.017002215	-2.15652E-06	0.000137654
ENSCAFT00000089255.1	Canis_familiaris.CanFam3.1.ncrna	-2.89354046	-3.23066E-06	5.07095E-10
ENSCAFT00000089287.1	Canis_familiaris.CanFam3.1.ncrna	-3.360168066	-1.36023E-06	0.000223465
ENSCAFT00000089310.1	Canis_familiaris.CanFam3.1.ncrna	-3.140480369	-1.07142E-06	0.001658548
ENSCAFT00000089320.1	Canis_familiaris.CanFam3.1.ncrna	-2.442042393	-3.49159E-06	5.42975E-09
ENSCAFT00000089400.1	Canis_familiaris.CanFam3.1.ncrna	-7.126432685	-1.80545E-05	2.07944E-90
ENSCAFT00000089505.1	Canis_familiaris.CanFam3.1.ncrna	-2.115500538	-1.81923E-06	0.000534034
ENSCAFT00000089530.1	Canis_familiaris.CanFam3.1.ncrna	-3.002141518	-3.71644E-06	1.84871E-11
ENSCAFT00000089584.1	Canis_familiaris.CanFam3.1.ncrna	-7.396793932	-1.91128E-05	7.1412E-111
ENSCAFT00000089691.1	Canis_familiaris.CanFam3.1.ncrna	-4.118468485	-5.20364E-06	9.62009E-18
ENSCAFT00000090021.1	Canis_familiaris.CanFam3.1.ncrna	-6.599325355	-3.71801E-05	2.25951E-84
ENSCAFT00000090074.1	Canis_familiaris.CanFam3.1.ncrna	-3.002055539	-1.52688E-06	0.023385117
ENSCAFT00000090140.1	Canis_familiaris.CanFam3.1.ncrna	-4.190041798	-1.33738E-05	1.85596E-68
ENSCAFT00000090204.1	Canis_familiaris.CanFam3.1.ncrna	-4.054075559	-3.82935E-06	5.6888E-15
ENSCAFT00000090207.1	Canis_familiaris.CanFam3.1.ncrna	-3.967504845	-1.48602E-06	1.36091E-05
ENSCAFT00000090211.1	Canis_familiaris.CanFam3.1.ncrna	-3.039659477	-5.93722E-06	3.54733E-12
ENSCAFT00000090266.1	Canis_familiaris.CanFam3.1.ncrna	-3.33267799	-2.92599E-06	7.8187E-10
ENSCAFT00000090286.1	Canis_familiaris.CanFam3.1.ncrna	-3.32762029	-2.48075E-06	1.63488E-08
ENSCAFT00000090300.1	Canis_familiaris.CanFam3.1.ncrna	-2.471133648	-1.12433E-06	0.004726068
ENSCAFT00000090314.1	Canis_familiaris.CanFam3.1.ncrna	-3.235210802	-8.66763E-07	0.00679593
ENSCAFT00000090315.1	Canis_familiaris.CanFam3.1.ncrna	-2.403609616	-7.2069E-06	5.80367E-17
ENSCAFT00000090323.1	Canis_familiaris.CanFam3.1.ncrna	-2.71858428	-7.31122E-07	0.03664877
ENSCAFT00000090335.1	Canis_familiaris.CanFam3.1.ncrna	-2.347674695	-1.68706E-05	5.27364E-32
ENSCAFT00000090371.1	Canis_familiaris.CanFam3.1.ncrna	-3.702110553	-3.38845E-06	5.68872E-12
ENSCAFT00000090403.1	Canis_familiaris.CanFam3.1.ncrna	-8.229974813	-3.76653E-05	2.65016E-88
ENSCAFT00000090480.1	Canis_familiaris.CanFam3.1.ncrna	-2.869748019	-4.45547E-06	6.73815E-10
ENSCAFT00000090517.1	Canis_familiaris.CanFam3.1.ncrna	-6.071774298	-2.81424E-05	1.98789E-89
ENSCAFT00000090569.1	Canis_familiaris.CanFam3.1.ncrna	-2.936733752	-1.55257E-06	6.99061E-05
ENSCAFT00000090636.1	Canis_familiaris.CanFam3.1.ncrna	-5.258160996	-1.49065E-06	1.16532E-06

ENSCAFT00000090646.1	Canis_familiaris.CanFam3.1.ncrna	-2.231993575	-1.4059E-06	0.002081829
ENSCAFT00000090674.1	Canis_familiaris.CanFam3.1.ncrna	-8.210687347	-1.16637E-06	3.74998E-06
ENSCAFT00000090721.1	Canis_familiaris.CanFam3.1.ncrna	-2.397097421	-1.91002E-06	0.000141288
ENSCAFT00000090733.1	Canis_familiaris.CanFam3.1.ncrna	-4.779716714	-1.60799E-06	5.81081E-07
ENSCAFT00000090742.1	Canis_familiaris.CanFam3.1.ncrna	-2.071098636	-1.34339E-06	0.006429143
ENSCAFT00000090743.1	Canis_familiaris.CanFam3.1.ncrna	-2.806344443	-1.85696E-06	3.1126E-05
ENSCAFT00000090791.1	Canis_familiaris.CanFam3.1.ncrna	-6.077658338	-2.18606E-05	2.5785E-131
ENSCAFT00000090821.1	Canis_familiaris.CanFam3.1.ncrna	-4.792852841	-1.73327E-05	2.5392E-105
ENSCAFT00000090831.1	Canis_familiaris.CanFam3.1.ncrna	-9.921497097	-3.12301E-06	5.1508E-19
ENSCAFT00000090859.1	Canis_familiaris.CanFam3.1.ncrna	-6.352808017	-2.76829E-05	3.24777E-91
ENSCAFT00000090872.1	Canis_familiaris.CanFam3.1.ncrna	-6.328638667	-1.77128E-05	1.556E-100
ENSCAFT00000090961.1	Canis_familiaris.CanFam3.1.ncrna	-10.42894714	-1.25407E-05	2.29031E-75
ENSCAFT00000090983.1	Canis_familiaris.CanFam3.1.ncrna	-2.891529783	-8.04689E-07	0.018127949
ENSCAFT00000091067.1	Canis_familiaris.CanFam3.1.ncrna	-2.293096536	-1.03724E-06	0.012791534
ENSCAFT00000091176.1	Canis_familiaris.CanFam3.1.ncrna	-2.401623813	-1.75767E-06	0.000311221
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ENSCAFT00000091236.1	Canis_familiaris.CanFam3.1.ncrna	-9.013361617	-2.5034E-06	2.64378E-14
ENSCAFT00000091269.1	Canis_familiaris.CanFam3.1.ncrna	-2.831986789	-4.29839E-06	1.48276E-12
ENSCAFT00000091276.1	Canis_familiaris.CanFam3.1.ncrna	-2.346209546	-3.00864E-06	1.2426E-05
ENSCAFT00000091301.1	Canis_familiaris.CanFam3.1.ncrna	-2.45142206	-2.20246E-06	1.53756E-05
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ENSCAFT00000092141.1	Canis_familiaris.CanFam3.1.ncrna	-3.722594786	-1.77398E-06	1.43769E-06
ENSCAFT00000092182.1	Canis_familiaris.CanFam3.1.ncrna	-3.220337344	-3.28605E-06	4.0971E-11
ENSCAFT00000092201.1	Canis_familiaris.CanFam3.1.ncrna	-2.496677918	-7.68223E-06	6.70002E-19
ENSCAFT00000092226.1	Canis_familiaris.CanFam3.1.ncrna	-2.847789252	-1.76093E-06	0.000153167
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ENSCAFT00000092339.1	Canis_familiaris.CanFam3.1.ncrna	-2.988491092	-5.11475E-06	1.53943E-15
ENSCAFT00000092340.1	Canis_familiaris.CanFam3.1.ncrna	-2.650509427	-8.896E-07	0.036899489
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ENSCAFT00000092402.1	Canis_familiaris.CanFam3.1.ncrna	-2.52857004	-2.26173E-06	3.67582E-06
ENSCAFT00000092421.1	Canis_familiaris.CanFam3.1.ncrna	-2.616483916	-1.84494E-06	2.76323E-05
ENSCAFT00000092509.1	Canis_familiaris.CanFam3.1.ncrna	-7.945171543	-6.87887E-06	1.98889E-41
ENSCAFT00000092579.1	Canis_familiaris.CanFam3.1.ncrna	-4.382555709	-1.73626E-05	7.2874E-104
ENSCAFT00000092708.1	Canis_familiaris.CanFam3.1.ncrna	-4.065795053	-7.79424E-06	4.3276E-13
ENSCAFT00000092802.1	Canis_familiaris.CanFam3.1.ncrna	-6.033753791	-1.46302E-05	2.16777E-30
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ENSCAFT00000092912.1	Canis_familiaris.CanFam3.1.ncrna	-2.17587744	-5.94685E-06	6.08139E-13
ENSCAFT00000092923.1	Canis_familiaris.CanFam3.1.ncrna	-5.123715127	-3.30622E-06	5.15889E-08
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ENSCAFT00000093128.1	Canis_familiaris.CanFam3.1.ncrna	-3.430519653	-7.17433E-06	6.33569E-16
ENSCAFT00000093129.1	Canis_familiaris.CanFam3.1.ncrna	-2.772775194	-3.55857E-06	7.22567E-10
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ENSCAFT00000093207.1	Canis_familiaris.CanFam3.1.ncrna	-9.264147037	-1.33678E-06	1.55821E-07
ENSCAFT00000093219.1	Canis_familiaris.CanFam3.1.ncrna	-4.700527008	-7.38083E-07	0.002187586
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ENSCAFT00000093335.1	Canis_familiaris.CanFam3.1.ncrna	-2.530655692	-2.32309E-06	2.57886E-06
ENSCAFT00000093337.1	Canis_familiaris.CanFam3.1.ncrna	-5.926837354	-2.69474E-05	3.0526E-142
ENSCAFT00000093343.1	Canis_familiaris.CanFam3.1.ncrna	-2.903427837	-8.08667E-07	0.043821232
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ENSCAFT00000093361.1	Canis_familiaris.CanFam3.1.ncrna	-7.709473651	-3.09055E-05	4.85317E-67
ENSCAFT00000093397.1	Canis_familiaris.CanFam3.1.ncrna	-91.02957937	-9.99398E-07	1.19489E-07
ENSCAFT00000093436.1	Canis_familiaris.CanFam3.1.ncrna	-2.806139663	-3.01233E-06	6.25846E-07
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ENSCAFT00000093546.1	Canis_familiaris.CanFam3.1.ncrna	-2.016915322	-1.19844E-06	0.015744941
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ENSCAFT00000093620.1	Canis_familiaris.CanFam3.1.ncrna	-3.137321795	-2.60028E-06	2.17897E-08
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ENST00000355837.4	Homo_sapiens.GRCh38.ncrna	-8.543556101	-9.35972E-07	3.5769E-05
ENST00000362554.1	Homo_sapiens.GRCh38.ncrna	-3.724039182	-5.43198E-07	0.043609323
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ENST00000364409.1	Homo_sapiens.GRCh38.ncrna	-2.031639752	-2.36185E-05	8.58507E-30
ENST00000365403.1	Homo_sapiens.GRCh38.ncrna	-3.67527785	-1.0377E-06	0.014170392
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ENST00000387377.1	Homo_sapiens.GRCh38.ncrna	-2.919980296	-8.89118E-07	0.005250961
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ENST00000415182.1	Homo_sapiens.GRCh38.ncrna	-53.73893227	-2.57193E-06	1.76587E-19
ENST00000416263.3	Homo_sapiens.GRCh38.ncrna	-3.235566359	-6.98532E-07	0.020228739
ENST00000417792.1	Homo_sapiens.GRCh38.ncrna	-9.722224401	-1.41084E-06	4.08785E-08
ENST00000419766.5	Homo_sapiens.GRCh38.ncrna	-33.86130164	-1.52225E-05	5.39614E-82
ENST00000422040.2	Homo_sapiens.GRCh38.ncrna	-2.7376355	-1.85798E-05	2.08975E-13
ENST00000423329.1	Homo_sapiens.GRCh38.ncrna	-80.97712281	-0.000154597	2.35136E-72

ENST00000424211.1	Homo_sapiens.GRCh38.ncrna	-4.823688911	-7.62542E-07	0.002076682
ENST00000429798.1	Homo_sapiens.GRCh38.ncrna	-2.178666516	-7.69307E-06	5.13214E-16
ENST00000431103.1	Homo_sapiens.GRCh38.ncrna	-4.456630769	-6.89382E-07	0.005161626
ENST00000433356.2	Homo_sapiens.GRCh38.ncrna	-27.35688194	-9.04987E-05	4.4834E-112
ENST00000437751.2	Homo_sapiens.GRCh38.ncrna	-118.2861503	-1.01372E-05	4.68244E-79
ENST00000438649.5	Homo_sapiens.GRCh38.ncrna	-3.584572143	-7.10362E-07	0.019747052
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ENST00000439559.2	Homo_sapiens.GRCh38.ncrna	-2.733351798	-6.71994E-07	0.032396789
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ENST00000446562.1	Homo_sapiens.GRCh38.ncrna	-2.183204954	-9.04742E-07	0.048237
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ENST00000459254.1	Homo_sapiens.GRCh38.ncrna	-3.67177513	-1.94175E-06	3.80864E-07
ENST00000463595.3	Homo_sapiens.GRCh38.ncrna	-170.1364655	-1.87755E-06	5.89142E-15
ENST00000483901.2	Homo_sapiens.GRCh38.ncrna	-11.23745408	-3.96888E-06	5.66887E-22
ENST00000485097.3	Homo_sapiens.GRCh38.ncrna	-167.9300681	-1.85305E-06	1.0506E-14
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ENST00000517961.3	Homo_sapiens.GRCh38.ncrna	-3.012644527	-2.75468E-05	8.71174E-69
ENST00000526254.1	Homo_sapiens.GRCh38.ncrna	-16.97852421	-1.38169E-06	1.34486E-07
ENST00000539795.1	Homo_sapiens.GRCh38.ncrna	-4.828959804	-7.63657E-07	0.001692552
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ENST00000555918.1	Homo_sapiens.GRCh38.ncrna	-5.343889111	-6.58977E-06	4.5124E-20
ENST00000560199.1	Homo_sapiens.GRCh38.ncrna	-6.248265062	-8.49051E-07	0.000297009
ENST00000562781.1	Homo_sapiens.GRCh38.ncrna	-7.552008173	-1.5532E-06	1.3761E-07
ENST00000563962.6	Homo_sapiens.GRCh38.ncrna	-21.56983277	-1.77797E-06	5.51415E-12
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ENST00000572453.1	Homo_sapiens.GRCh38.ncrna	-3.738512315	-2.91534E-06	1.55685E-08
ENST00000572818.2	Homo_sapiens.GRCh38.ncrna	-3.899025639	-0.00011174	0
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ENST00000581816.1	Homo_sapiens.GRCh38.ncrna	-9.599533834	-2.47125E-05	3.8803E-164
ENST00000582141.5	Homo_sapiens.GRCh38.ncrna	-9.616558329	-2.44363E-05	8.1382E-163
ENST00000590966.1	Homo_sapiens.GRCh38.ncrna	-4.057526587	-7.24926E-07	0.011919714
ENST00000591365.1	Homo_sapiens.GRCh38.ncrna	-3.969431399	-5.9209E-07	0.019473458
ENST00000597346.1	Homo_sapiens.GRCh38.ncrna	-2.272102326	-2.98493E-06	8.34448E-07
ENST00000600805.2	Homo_sapiens.GRCh38.ncrna	-3.469753895	-1.23705E-06	0.004391412
ENST00000602529.2	Homo_sapiens.GRCh38.ncrna	-32.28131716	-2.7035E-06	3.9319E-20
ENST00000602947.3	Homo_sapiens.GRCh38.ncrna	-21.89238801	-2.5927E-06	1.13557E-17
ENST00000606596.1	Homo_sapiens.GRCh38.ncrna	-80.07549615	-8.77799E-07	1.38265E-06
ENST00000607967.1	Homo_sapiens.GRCh38.ncrna	-8.460853372	-9.07361E-06	6.16524E-47
ENST00000608405.2	Homo_sapiens.GRCh38.ncrna	-13.64905342	-1.56961E-06	1.0083E-09
ENST00000609803.2	Homo_sapiens.GRCh38.ncrna	-4.213163762	-8.82669E-07	0.001315414
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ENST00000671275.1	Homo_sapiens.GRCh38.ncrna	-117.7235739	-1.00885E-05	8.24721E-79

References

1. Prouteau, A.; André, C. Canine Melanomas as Models for Human Melanomas: Clinical, Histological, and Genetic Comparison. *Genes* **2019**, *10*, 501. https://doi.org/10.3390/genes10070501.

2. Hardwick, L. A Comparative View on Molecular Alterations and Potential Therapeutic Strategies for Canine Oral Melanoma. *Vet. Sci.* **2021**, *8*, 286. https://doi.org/10.3390/vetsci8110286.

3. Hernandez, B.; Adissu, H.A.; Wei, B.R.; Michael, H.T.; Merlino, G.; Mark Simpson, R. Naturally Occurring Canine Melanoma as a Predictive Comparative Oncology Model for Human Mucosal and Other Triple Wild-Type Melanomas. *Int. J. Mol. Sci.* **2018**, *19*, 394. https://doi.org/10.3390/ijms19020394.

4. Gardner, H.L.; Fenger, J.M.; London, C.A. Dogs as a Model for Cancer. *Annu. Rev. Anim. Biosci.* **2016**, *4*, 199–222. https://doi.org/10.1146/annurev-animal-022114-110911.

5. Van Der Weyden, L.; Patton, E.E.; Wood, G.A.; Foote, A.K.; Brenn, T.; Arends, M.J.; Adams, D.J. Cross-Species Models of Human Melanoma. *J. Pathol.* **2016**, *238*, 152–165. https://doi.org/10.1002/path.4632.

6. Hasan, M.N.; Rahman, M.M.; Husna, A.A.; Kato, D.; Nakagawa, T.; Arif, M.; Miura, N. Hypoxia-Related Y RNA Fragments as a Novel Potential Biomarker for Distinguishing Metastatic Oral Melanoma from Non-Metastatic Oral Melanoma in Dogs. *Vet. Q.* **2024**, *44*, 1–8. https://doi.org/10.1080/01652176.2023.2300943.

7. Emami Nejad, A.; Najafgholian, S.; Rostami, A.; Sistani, A.; Shojaeifar, S.; Esparvarinha, M.; Nedaeinia, R.; Haghjooy Javanmard, S.; Taherian, M.; Ahmadlou, M.; et al. The Role of Hypoxia in the Tumor Microenvironment and

Development of Cancer Stem Cell: A Novel Approach to Developing Treatment. *Cancer Cell Int.* **2021**, *21*, 62. https://doi.org/10.1186/s12935-020-01719-5.

8. Hino, Y.; Rahman, M.M.; Lai, Y.C.; Husna, A.A.; Chen, H. wen; Hasan, M.N.; Nakagawa, T.; Miura, N. Hypoxic miRNAs Expression are Different Between Primary and Metastatic Melanoma Cells. *Gene* **2021**, *782*, 145552 https://doi.org/10.1016/j.gene.2021.145552.

9. Barreca, M.M.; Zichittella, C.; Alessandro, R.; Conigliaro, A. Hypoxia-induced Non-coding RNAs Controlling Cell Viability in Cancer. *Int. J. Mol. Sci.* **2021**, *22*, 1857. https://doi.org/10.3390/ijms22041857.

10. Singh, D.; Arora, R.; Kaur, P.; Singh, B.; Mannan, R.; Arora, S. Overexpression of Hypoxia-Inducible Factor and Metabolic Pathways: Possible Targets of Cancer. *Cell Biosci.* **2017**, *7*, 62. https://doi.org/10.1186/s13578-017-0190-2.

11. Heddleston, J.M.; Li, Z.; Lathia, J.D.; Bao, S.; Hjelmeland, A.B.; Rich, J.N. Hypoxia Inducible Factors in Cancer Stem Cells. *Br. J. Cancer* **2010**, *102*, 789–795. https://doi.org/10.1038/sj.bjc.6605551.

12. P ucciarelli, D., Lengger, N., Takáčová, M., Csaderova, L., Bartosova, M., Breiteneder, H., Pastorekova, S., Hafner, C., Hypoxia increases the heterogeneity of melanoma cell populations and affects the response to vemurafenib. *Mol. Med. Rep.* **2016.** 13, 3281–3288. https://doi.org/10.3892/mmr.2016.4888

13. Widmer, D.S., Hoek, K.S., Cheng, P.F., Eichhoff, O.M., Biedermann, T., Raaijmakers, M.I.G., Hemmi, S., Dummer, R., Levesque, M.P., Hypoxia contributes to melanoma heterogeneity by triggering HIF1α-dependent phenotype switching. *J. Invest. Dermatol.***2013.** 133, 2336–2343. https://doi.org/10.1038/jid.2013.115

14. Huber, R., Meier, B., Otsuka, A., Fenini, G., Satoh, T., Gehrke, S., Widmer, D., Levesque, M.P., Mangana, J., Kerl, K., Gebhardt, C., Fujii, H., Nakashima, C., Nonomura, Y., Kabashima, K., Dummer, R., Contassot, E., French, L.E.,

Tumour hypoxia promotes melanoma growth and metastasis via High Mobility Group Box-1 and M2-like macrophages. *Sci. Rep.* **2016.**6, 29914. https://doi.org/10.1038/srep29914

15. Rankin, E.B., Nam, J.M., Giaccia, A.J. Hypoxia: Signaling the Metastatic Cascade. *Trends in Cancer,* **2016.** 2, 295–304. https://doi.org/10.1016/j.trecan.2016.05.006

16. Nouraee, N., Mowla, S.J., Calin, G.A., Tracking miRNAs' footprints in tumor-microenvironment interactions: Insights and implications for targeted cancer therapy. *Genes Chromosom. Cancer,* **2015.** 54, 335–352. https://doi.org/10.1002/gcc.22244

17. Qin, Q., Wei, F., Li, B., Multiple functions of hypoxia-regulated miR-210 in cancer. *J. Exp. Clin. Cancer Res.***2014.** 33, 50. https://doi.org/10.1186/1756-9966-33-50

18. Guo, Y.J., Liu, J.X., Guan, Y.W., Hypoxia induced upregulation of miR-301a/b contributes to increased cell autophagy and viability of prostate cancer cells by targeting NDRG2. *Eur. Rev. Med. Pharmacol. Sci.* **2016.** 20, 101–108.

19. Mace, T.A., Collins, A.L., Wojcik, S.E., Croce, C.M., Lesinski, G.B., Bloomston, M., Hypoxia induces the overexpression of microRNA-21 in pancreatic cancer cells. *J. Surg. Res.* **2013.** 184, 855–860. https://doi.org/10.1016/j.jss.2013.04.061

20. Nagpal, N., Ahmad, H.M., Chameettachal, S., Sundar, D., Ghosh, S., Kulshreshtha, R., HIF-inducible miR-191 promotes migration in breast cancer through complex regulation of TGFß-signaling in hypoxic microenvironment. *Sci. Rep.***2015.** 5, 1–14. https://doi.org/10.1038/srep09650

21. Seok, J.K., Lee, S.H., Kim, M.J., Lee, Y.M., MicroRNA-382 induced by HIF-1α is an angiogenic miR targeting the tumor suppressor phosphatase and tensin homolog. *Nucleic Acids Res.* **2014.** 42, 8062–8072. https://doi.org/10.1093/nar/gku515

22. Wang, W., Liu, M., Guan, Y., Wu, Q., Hypoxia-responsive Mir-301a and Mir-301b promote radioresistance of prostate cancer cells via downregulating NDRG2. *Med. Sci. Monit.* **2016.** 22, 2126. https://doi.org/10.12659/MSM.896832

23. Wang, X., Luo, G., Zhang, K., Cao, J., Huang, C., Jiang, T., Liu, B., Su, L., Qiu, Z., Hypoxic tumor-derived exosomal miR-301a mediates M2 macrophage polarization via PTEN/PI3Kg to promote pancreatic cancer metastasis. *Cancer Res.* **2018.** 78, 4586–4598. https://doi.org/10.1158/0008-5472.CAN-17-3841

24. Yue, X., Lan, F., Xia, T., Hypoxic Glioma Cell-Secreted Exosomal miR-301a Activates Wnt/ß-catenin Signaling and Promotes Radiation Resistance by Targeting TCEAL7. *Mol. Ther.* **2019.** 27, 1939–1949. https://doi.org/10.1016/j.ymthe.2019.07.001

25. Todoroff, R.J., Brodey, R.S., Oral and pharyngeal neoplasia in the dog: a retrospective survey of 361 cases. *J. Am. Vet. Med. Assoc.* **1979.** 175, 567.

26. Gillard, M., Cadieu, E., De Brito, C., Abadie, J., Vergier, B., Devauchelle, P., Degorce, F., Dréano, S., Primot, A., Dorso, L., Lagadic, M., Galibert, F., Hédan, B., Galibert, M.D., André, C., Naturally occurring melanomas in dogs as models for non-UV pathways of human melanomas. *Pigment Cell Melanoma Res.* **2014.** 27, 90–102. https://doi.org/https://doi.org/10.1111/pcmr.12170

27. Smith, S.H., Goldschmidt, M.H., Mcmanus, P.M., Medicine, V., A Comparative Review of Melanocytic Neoplasms. *Vet. Pathol.* **2002.** 39, 651–678. https://doi.org/10.1354/vp.39-6-651

28. Treggiari, E., Grant, J.P., North, S.M., Treggiari, Elisabetta Grant, Jessica Pauline North, S.M., A retrospective review of outcome and survival following surgery and adjuvant xenogeneic DNA vaccination in 32 dogs with oral malignant melanoma. *J. Vet. Med. Sci.* **2016.** 78, 845–850. https://doi.org/10.1292/jvms.15-0510

29. Verganti, S., Berlato, D., Blackwood, L., Amores-Fuster, I., Polton, G.A., Elders, R., Doyle, R., Taylor, A., Murphy, S., Use of Oncept melanoma vaccine in 69 canine oral malignant melanomas in the UK. *J. Small Anim. Pract.***2017.** 58, 10–16. https://doi.org/10.1111/jsap.12613

30. Boston, S.E., Lu, X., Culp, W.T.N., Montinaro, V., Romanelli, G., Dudley, R.M., Liptak, J.M., Mestrinho, L.A., Buracco, P., 2014. Efficacy of systemic adjuvant therapies administered to dogs after excision of oral malignant melanomas: 151 cases (2001-2012). *J. Am. Vet. Med. Assoc.* **2017.** 245, 401–407. https://doi.org/10.2460/javma.245.4.401

31. Rahman, M.M., Lai, Y.C., Husna, A.A., Chen, H.W., Tanaka, Y., Kawaguchi, H., Hatai, H., Miyoshi, N., Nakagawa, T., Fukushima, R., Miura, N., Transcriptome analysis of dog oral melanoma and its oncogenic analogy with human melanoma. *Oncol. Rep.* **2020.** 43, 16–30. https://doi.org/10.3892/or.2019.7391

32. Mihajlovic, M., Vlajkovic, S., Jovanovic, P., Stefanovic, V., Primary mucosal melanomas: A comprehensive review. *Int. J. Clin. Exp. Pathol.***2012.** 5, 739–753.

33. Michniewicz, A., Czyz, M., Role of miRNAs in melanoma metastasis. *Cancers (Basel).***2019.** 11, 326. https://doi.org/10.3390/cancers11030326

34. Walbrecq, G., Lecha, O., Gaigneaux, A., Fougeras, M.R., Philippidou, D., Margue, C., Nomigni, M.T., Bernardin, F., Dittmar, G., Behrmann, I., Kreis, S., Hypoxia-induced adaptations of mirnomes and proteomes in melanoma cells and their secreted extracellular vesicles. *Cancers (Basel).* **2020.** 12, 692. https://doi.org/10.3390/cancers12030692

35. Inoue, K., Ohashi, E., Kadosawa, T., Hong, S.-H., Matsunaga, S., Mochizuki, M., Nishimura, R., Sasaki, N.,Establishment and characterization of four canine melanoma cell Lines. *J. Vet. Med. Sci.* **2004.** 66, 1437–1440. https://doi.org/https://doi.org/10.1292/jvms.66.1437

36. Fan, Y., Siklenka, K., Arora, S.K., Ribeiro, P., Kimmins, S., Xia, J., miRNet - dissecting miRNA-target interactions and functional associations through network-based visual analysis. *Nucleic Acids Res.* **2016.** 44, W135–W141. https://doi.org/https://doi.org/10.1093/nar/gkw288

37. Schmittgen, T.D., Livak, K.J., Analyzing real-time PCR data by the comparative CTmethod. *Nat. Protoc.* **2008.** 3, 1101–1108. https://doi.org/10.1038/nprot.2008.73

38. Rahman, M.M., Lai, Y.C.Y.-C., Husna, A.A., Chen, H.-W.H.W., Tanaka, Y., Kawaguchi, H., Miyoshi, N., Nakagawa, T., Fukushima, R., Miura, N., Micro RNA transcriptome profile in canine oral melanoma. *Int. J. Mol. Sci.* **2019.** 20, 4832. https://doi.org/10.3390/ijms20194832

39. Bavelloni, A., Ramazzotti, G., Poli, A., Piazzi, M., Focaccia, E., Blalock, W., Faenza, I., Mirna-210: A current overview. *Anticancer Res.* **2017.** 37, 6511–6521. https://doi.org/10.21873/anticanres.12107

40. Huang, X., Le, Q.T., Giaccia, A.J., MiR-210 - micromanager of the hypoxia pathway. *Trends Mol. Med.* **2010.** 16, 230–237. https://doi.org/10.1016/j.molmed.2010.03.004

41. Huang, X., Ding, L., Bennewith, K.L., Tong, R.T., Welford, S.M., Ang, K.K., Story, M., Le, Q.T., Giaccia, A.J., Hypoxia-Inducible mir-210 Regulates Normoxic Gene Expression Involved in Tumor Initiation. *Mol. Cell.* **2009.** 35, 856–867. https://doi.org/10.1016/j.molcel.2009.09.006

42. Rankin, E.B., Giaccia, A.J., Hypoxic control of metastasis. *Science.* **2016.** 80. 352, 175–180. https://doi.org/10.1126/science.aaf4405

43. Cacho-Díaz, B., García-Botello, D.R., Wegman-Ostrosky, T., Reyes-Soto, G., Ortiz-Sánchez, E., Herrera-Montalvo, L.A., Tumor microenvironment differences between primary tumor and brain metastases. *J. Transl. Med.* **2020.** 18, 1. https://doi.org/10.1186/s12967-019-02189-8

44. Liu, G., Zhan, X., Dong, C., Liu, L., Genomics alterations of metastatic and primary tissues across 15 cancer types. *Sci. Rep.* **2017.** 7, 1–9. https:// doi.org/10.1038/s41598-017-13650-3

45. Noguchi, S., Iwasaki, J., Kumazaki, M., Mori, T., Maruo, K., Sakai, H., Yamada, N., Shimada, K., Naoe, T., Kitade, Y., Akao, Y., Chemically modified synthetic microRNA-205 inhibits the growth of melanoma cells in vitro and in vivo. *Mol. Ther.* **2013.** 21, 1204–1211. https://doi.org/10.1038/mt.2013.70

46. Ushio, N., Rahman, M.M., Maemura, T., Lai, Y.C., Iwanaga, T., Kawaguchi, H., Miyoshi, N., Momoi, Y., Miura, N., Identification of dysregulated microRNAs in canine malignant melanoma. *Oncol. Lett.* **2019.** 17, 1080–1088. https://doi.org/10.3892/ol.2018.9692

47. Yoshikawa, R., Mori, T., Noguchi, S., Akao, Y., Maruo, K., Kitade, Y., Synthetic microRNA-205 exhibited tumour suppression in spontaneous canine malignant melanoma by intratumoral injection. *Vet. Comp. Oncol.* **2019.** 17, 407–412. https://doi.org/10.1111/vco.12485

48. Dar, A.A., Majid, S., De Semir, D., Nosrati, M., Bezrookove, V., Kashani-Sabet, M., miRNA-205 suppresses melanoma cell proliferation and induces senescence via regulation of E2F1 protein. *J. Biol. Chem.* **2011.** 286, 16606–16614. https://doi.org/10.1074/jbc.M111.227611

49. Wang, Long, M., Zhang, S., Cheng, Z., Zhao, X., He, F., Liu, H., Ming, L., Hypoxia inducible factor-1a regulates autophagy via the p27-E2F1 signaling pathway. *Mol. Med. Rep.* **2017.** 16, 2107–2112. https://doi.org/10.3892 /mmr.2017.6794

50. Gillard, M., Cadieu, E., De Brito, C., Abadie, J., Vergier, B., Devauchelle, P., Degorce, F., Dréano, S., Primot, A., Dorso, L., Lagadic, M., Galibert, F., Hédan, B., Galibert, M.D., André, C., Naturally occurring melanomas in dogs as models for non-UV pathways of human melanomas. *Pigment Cell Melanoma Res.* **2014.** 27, 90–102. https://doi.org/https://doi.org/10.1111/pcmr.12170

51. Liu, S., Tetzlaff, M.T., Liu, A., Liegl-Atzwanger, B., Guo, J., Xu, X., Loss of microRNA-205 expression is associated with melanoma progression. *Lab. Investig.* **2012.** 92, 1084–1096. https://doi.org/10.1038/labinvest.2012.62

52. Wang, L., Kang, F.B., Wang, J., Yang, C., Hee, D.W., Downregulation of miR-205 contributes to epithelial-mesenchymal transition and invasion in triple-negative breast cancer by targeting HMGB1-RAGE signaling pathway. *Anticancer. Drugs* **2019.** 30, 225–232. https://doi.org/10.1097/CAD.0000000000000705

53. Wang, X., Yu, M., Zhao, K., He, M., Ge, W., Sun, Y., Wang, Y., Sun, H., Hu, Y., Upregulation of miR-205 under hypoxia promotes epithelial–mesenchymal transition by targeting ASPP2. *Cell Death Dis.* **2016.** 7, e2517. https://doi.org/10.1038/cddis.2016.412

54. Noguchi., Mori, T., Hoshino, Y., Yamada, N., Maruo, K., Akao, Y., MicroRNAs as tumour suppressors in canine and human melanoma cells and as a prognostic factor in canine melanomas. *Vet. Comp. Oncol.* **2013.** 11, 113–123. https://doi.org/10.1002/vco.306

55. Liu, Y., Nie, H., Zhang, K., Ma, D., Yang, G., Zheng, Z., Liu, K., Yu, B., Zhai, C., Yang, S., A feedback regulatory loop between HIF-1α and miR-21 in response to hypoxia in cardiomyocytes. *FEBS Lett.* **2014.** 588, 3137–3146. https://doi.org/10.1016/j.febslet.2014.05.067

56. Agostini, M., Ganini, C., Candi, E., Melino, G., The role of noncoding RNAs in epithelial cancer. *Cell Death Discov.* **2020.** 6, 1–12. https://doi.org/10.1038/s41420-020-0247-6

57. Neagu, M., Constantin, C., Cretoiu, S.M., Zurac, S., miRNAs in the Diagnosis and Prognosis of Skin Cancer. *Front. Cell Dev. Biol.* **2020.** 8, 71. https://doi.org/10.3389/fcell.2020.00071

58. Cui, L., Li, Y., Lv, X., Li, J., Wang, X., Lei, Z., Li, X., Expression of MicroRNA-301a and its Functional Roles in Malignant Melanoma. *Cell. Physiol. Biochem.* **2016.** 40, 230–244. https://doi.org/10.1159/000452540

59. Karakashev, S. V., Reginato, M.J., Progress toward overcoming hypoxia-induced resistance to solid tumor therapy. *Cancer Manag. Res.* **2015.** 7, 253–264. https://doi.org/10.2147/CMAR.S58285

60. Li, J.Q., Wu, X., Gan, L., Yang, X.L., Miao, Z.H., Hypoxia induces universal but differential drug resistance and impairs anticancer mechanisms of 5-fluorouracil in hepatoma cells. *Acta Pharmacol. Sin.* **2017.** 38, 1642–1654. https://doi.org/10.1038/aps.2017.79

61. Nobre, A.R., Entenberg, D., Wang, Y., Condeelis, J., Aguirre-Ghiso, J.A., The Different Routes to Metastasis via Hypoxia-Regulated Programs. *Trends Cell Biol.* **2018.** 28, 941–956. https://doi.org/10.1016/j.tcb.2018.06.008

62. Young, S.D., Marshall, R.S., Hill, R.P., Hypoxia induces DNA overreplication and enhances metastatic potential of murine tumor cells. *Proc. Natl. Acad. Sci. U. S. A.* **1988.** 85, 9533–9537. https://doi.org/10.1073/pnas.85.24.9533

63. Hitte, C.; Le Béguec, C.; Cadieu, E.; Wucher, V.; Primot, A.; Prouteau, A.; Botherel, N.; Hédan, B.; Lindblad-Toh, K.; André, C.; et al. Genome-Wide Analysis of Long Non-Coding RNA Profiles in Canine Oral Melanomas. *Genes* **2019**, *10*, 477. https://doi.org/10.3390/genes10060477.

64. Sutherland, R.M. Tumor Hypoxia and Gene Expression—Implications for Malignant Progression and Therapy. *Acta Oncol.* **1998**, *37*, 567–574. https://doi.org/10.1080/028418698430278.

65. Rahman, M.M.; Lai, Y.C.; Husna, A.A.; Chen, H.W.; Tanaka, Y.; Kawaguchi, H.; Hatai, H.; Miyoshi, N.; Nakagawa, T.; Fukushima, R.; et al. Aberrantly Expressed snoRNA, snRNA, piRNA and tRFs in Canine Melanoma. *Vet. Comp. Oncol.* **2020**, *18*, 353–361. https://doi.org/10.1111/vco.12558.

66. Husna, A.A.; Rahman, M.M.; Lai, Y.C.; Chen, H.W.; Hasan, M.N.; Nakagawa, T.; Miura, N. Identification of Melanoma-Specific Exosomal miRNAs as the Potential Biomarker for Canine Oral Melanoma. *Pigment Cell Melanoma Res.* **2021**, *34*, 1062–1073. https://doi.org/10.1111/pcmr.13000.

67. Husna, A.A.; Rahman, M.M.; Chen, H.W.; Hasan, M.N.; Nakagawa, T.; Miura, N. Long Non-Coding RNA and Transfer RNA-Derived Small Fragments in Exosomes are Potential Biomarkers for Canine Oral Melanoma. *Vet. Comp. Oncol.* **2022**, *20*, 653–663. https://doi.org/10.1111/vco.12818.

68. Lou, W.; Xiao, S.; Lin, K. Identification of a Hypoxia-suppressed lncRNA RAMP2-AS1 in Breast Cancer. *Non-Coding RNA Res.* **2024**, *9*, 782–795. https://doi.org/10.1016/j.ncrna.2024.02.007.

69. Kenneth, N.S.; Rocha, S. Regulation of Gene Expression by Hypoxia. *Biochem. J.* **2008**, *414*, 19–29. https://doi.org/10.1042/BJ20081055.

70. Nakayama, K.; Kataoka, N. Regulation of Gene Expression Under Hypoxic Conditions. *Int. J. Mol. Sci.* **2019**, *20*, 3278. https://doi.org/ 10.3390/ijms20133278.

71. Peng, X.; Gao, H.; Xu, R.; Wang, H.; Mei, J.; Liu, C. The Interplay between HIF-1α and Noncoding RNAs in Cancer. *J. Exp. Clin. Cancer Res*. **2020**, *39*, 27. https://doi.org/10.1186/s13046-020-1535-y.

72. Kim, W.S.; Vinayak, A.; Powers, B. Comparative Review of Malignant Melanoma and Histologically Well-Differentiated Melanocytic Neoplasm in the Oral Cavity of Dogs. *Vet. Sci.* **2021**, *8*, 261. https://doi.org/10.3390/vetsci8110261.

73. Gola, C.; Maniscalco, L.; Iussich, S.; Morello, E.; Olimpo, M.; Martignani, E.; Accornero, P.; Giacobino, D.; Mazzone, E.; Modesto, P.; et al. Hypoxia-associated Markers in the Prognosis of Oral Canine Melanoma. *Vet. Pathol.* **2024**, *13*, p.03009858241244853. https://doi.org/10.1177/03009858241244853.

74. Lu, X.; Kang, Y. Hypoxia and Hypoxia-Inducible Factors: Master Regulators of Metastasis. *Clin. Cancer Res.* **2010**, *16*, 5928–5935. https://doi.org/10.1158/1078-0432.CCR-10-1360.

75. Joseph, J.P.; Harishankar, M.K.; Pillai, A.A.; Devi, A. Hypoxia Induced EMT: A Review on the Mechanism of Tumor Progression and Metastasis in OSCC. *Oral Oncol.* **2018**, *80*, 23–32. https://doi.org/10.1016/j.oraloncology.2018.03.004.

76. Obacz, J.; Pastorekova, S.; Vojtesek, B.; Hrstka, R. Cross-Talk between HIF and p53 as Mediators of Molecular Responses to Physiological and Genotoxic Stresses. *Mol. Cancer* **2013**, *12*, 93. https://doi.org/10.1186/1476-4598-12-93.

77. Ibrahim, A.A.; Schmithals, C.; Kowarz, E.; Köberle, V.; Kakoschky, B.; Pleli, T.; Kollmar, O.; Nitsch, S.; Waidmann, O.; Finkelmeier, F.; et al. Hypoxia Causes Downregulation of Dicer in Hepatocellular Carcinoma, Which Is Required for Upregulation of Hypoxia-Inducible Factor 1α and Epithelial–Mesenchymal Transition. *Clin. Cancer Res.* **2017**, *23*, 3896–3905. https://doi.org/10.1158/1078-0432.CCR-16-1762.

78. Cheng, J.C.; Klausen, C.; Leung, P.C.K. Hypoxia-Inducible Factor 1 Alpha Mediates Epidermal Growth Factor-Induced Down-regulation of E-Cadherin Expression and Cell Invasion in Human Ovarian Cancer Cells. *Cancer Lett.* **2013**, *329*, 197–206. https://doi.org/10.1016/j.canlet.2012.10.029.

79. Kalluri, R. The Biology and Function of Exosomes in Cancer. *J. Clin. Investig.* **2016**, *126*, 1208–1215. https://doi.org/10.1172/JCI81135.

80. Hoshino, A.; Costa-Silva, B.; Shen, T.L.; Rodrigues, G.; Hashimoto, A.; Tesic Mark, M.; Molina, H.; Kohsaka, S.; Di Giannatale, A.; Ceder, S.; et al. Tumour Exosome Integrins Determine Organotropic Metastasis. *Nature* **2015**, *527*, 329–335. https://doi.org/10.1038/nature15756.

81. Choudhry, H.; Harris, A.L.; McIntyre, A. The Tumour Hypoxia Induced Non-Coding Transcriptome. *Mol. Aspects Med.* **2016**, *47–48*, 35–53. https://doi.org/10.1016/j.mam.2016.01.003.

82. Leucci, E.; Coe, E.A.; Marine, J.C.; Vance, K.W. The Emerging Role of Long Non-Coding RNAs in Cutaneous Melanoma. *Pigment Cell Melanoma Res.* **2016**, *29*, 619–626. https://doi.org/10.1111/pcmr.12537.

83. Gutschner, T.; Diederichs, S. The Hallmarks of Cancer: A Long Non-Coding RNA Point of View. *RNA Biol.* **2012**, *9*, 703–719. https://doi.org/10.4161/rna.20481.