

Nuclear Mitochondrion in the Cell of the Mouse Thymus

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Although the literature contains several references to various types of nuclear inclusions,¹⁻⁹⁾ we have as yet very little information on the matter of nuclear mitochondria. Brandes et al. (1965)¹⁰⁾ reported nuclear mitochondria in leukemic cells. Their communication has encouraged our present report on similar observation on the thymic tissue of normal mouse.

OBSERVATION

The thymus was removed from a 2-month-old male mouse of C₅₇BL strain. Small blocks of the thymus were fixed in Caulfield's solution,¹¹⁾ dehydrated with graded concentrations of alcohol and embedded in epon 812. The material was cut with glass knives, and the sections mounted on 150 copper grids, double stained with uranyl acetate and lead citrate, and observed under the JEM-T6S electron microscope.

Fig. 1 is an electron micrograph showing a membranous organelle in the nucleus resembling mitochondrion. The cell containing the peculiar organelle in its nucleus is considered to be the reticular type of cell owing to its shape. Fig. 2 shows a higher magnification of the nucleus. This structure is completely identical to the ordinary mitochondrion in the cytoplasm of cell in that it possesses a double surrounding membrane and numerous cristae projecting into the matrix of low density.

Several possibilities regarding the origin of the aberrant mitochondrion have been suggested,^{8,10)} but we are not in the position to discuss the question about its origin. The most likely possibility to assume is that the mitochondrion located in the vicinity of the nucleus has been included within the nucleus during an abnormal mitosis.

SUMMARY

The aberrant mitochondrion within the nucleus of reticulum cell of the mouse thymus has been illustrated and described.

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EXPLANATION OF FIGURES

Fig. 1. A portion of thymic tissue of a 2-month-old mouse. Note a cell containing an aberrant mitochondrion within the nucleus (arrow). Lymphocyte (L) is seen in the right of this cell. Approximately $\times 8,000$.

Fig. 2. Enlargement of the nuclear mitochondrion at arrow shown in Fig. 1. Note that this structure possesses a double surrounding membrane and numerous internal cristae. Approximately $\times 24,000$.

