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# Mitochondrion

National Cancer Institute

## Source

National Cancer Institute. *Mitochondrion*. NCI Thesaurus. Code C13258.

Semiautonomous, self-reproducing organelles that occur in the cytoplasm of all cells of most, but not all, eukaryotes. Mitochondria contain distinctive ribosomes, transfer RNAs, amino acyl t-RNA synthetases, and elongation and termination factors. Mitochondria depend upon genes within the nucleus for many essential messenger RNAs.

Mitochondria consist of two sets of membranes, a smooth continuous outer coat and an inner membrane arranged in tubules or more often in folds that form platelike double membranes (cristae). Mitochondria are the principal energy source of the cell and contains the cytochrome enzymes of terminal electron transport and the enzymes of the citric acid cycle, fatty acid oxidation, and oxidative phosphorylation. Mitochondria are the sites of the reactions of oxidative phosphorylation, which result in the formation of ATP.