**BACKGROUND**

NADH-ubiquinone oxidoreductase (complex I) is a complicated multiprotein complex located in the inner mitochondrial membrane. Human complex I is important for energy metabolism because its main function is to transport electrons from NADH to ubiquinone, which is accompanied by translocation of protons from the mitochondrial matrix to the intermembrane space. Human complex I appears to consist of 41 subunits. A small number of complex I subunits are the products of mitochondrial genes (subunits 1-7), while the remainder are nuclear encoded and imported from the cytoplasm. Various tissues from patients with neurodegenerative disease are frequently deficient in complex I. The transcript expression of the complex I subunit 4 is significantly decreased in the cell models of Parkinson’s disease (PD), suggesting that functional defects in complex I enzyme activity in PD may result from changes in mRNA levels. Complex I 24 kDa subunit is significantly reduced in occipital cortex and thalamus in patients with Down syndrome (DS) and temporal and occipital cortices in patients with Alzheimer’s disease (AD). Complex I-75 kDa subunit is significantly reduced in brain regions from patients with DS (temporal, occipital and caudate nucleus) and AD (parietal cortex). Thus, reductions of two subunits of complex I may lead to the impairment of energy metabolism and may result in neuronal cell death.

**REFERENCES**


**CHROMOSOMAL LOCATIONS**

Genetic locus: ND4L (human) mapping to MT; ND4L (mouse) mapping to MT.

**SOURCE**

ND4L (H-94) is a rabbit polyclonal antibody raised against amino acids 3-97 of ND4L of human origin.

**STORAGE**

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.