Resource Summary Report

Generated by NIF on Apr 27, 2025

Human Mitochondrial Protein Database

RRID:SCR_002913
Type: Tool

Proper Citation

Human Mitochondrial Protein Database (RRID:SCR_002913)

Resource Information

URL: http://bioinfo.nist.gov/hmpd/

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Description: Database of mitochondrial and human nuclear encoded proteins involved in mitochondrial biogenesis and function. This database consolidates information from SwissProt, LocusLink, Protein Data Bank (PDB), GenBank, Genome Database (GDB), Online Mendelian Inheritance in Man (OMIM), Human Mitochondrial Genome Database (mtDB), MITOMAP, Neuromuscular Disease Center and Human 2-D PAGE Databases. The mitochondrion plays a central role in cellular metabolism, and evidence of mitochondrial involvement in a number of different human diseases is increasing. This database is intended as a tool not only to aid in studying the mitochondrion but in studying the associated diseases. Mitochondrial DNA Sequence: A graphical tool was developed to visualize the human mitochondrial DNA sequences that highlight coding regions for RNAs and proteins. Disease susceptible mutations are also noted in the sequence. Mitochondrial DNA Polymorphism: Human mitochondrial sequences of different ethnic groups were obtained from the Human Mitochondrial Genome Database. A DNA sequence analysis tool was developed to compare polymorphisms of different human mitochondrial DNA sequences. This tool allows the user to select mitochondrial sequences from any two human populations and compare them for sequences variations. Mitochondrial proteins related diseases: Malfunction of mitochondrial proteins affect many cells from brain, heart, liver, skeletal muscles, kidney, and the endocrine and the respiratory systems which lead to many diseases. Relevant information for mitochondrial related diseases from OMIM, the Neuromuscular Disease Center and MITOMAP are gathered, and mitochondrion-associated diseases are grouped, categorized, and linked to OMIM. 3-D Structures of Mitochondrial proteins: The available 3D structures for mitochondrial proteins are presented through a custom-made interface. A concise HTML page is generated for reporting the structural details and the associated information obtained from relevant web sites (PDBREPORT, Interatomic Contacts of Structural Units (CSU), PROCHECK, Ligand Protein Contacts (LPC),

PROMOTIF and CastP). References are linked to the PubMed site. The 3-D structures are presented through the use of a Kinemage.

Abbreviations: HMPDb

Synonyms: Human Mitochondrial Protein Database

Resource Type: service resource, d spatial image, data analysis service, data or information resource, database, production service resource, analysis service resource

Keywords: mitochondrial protein, nuclear protein, mitochondrion, dna sequence, dna polymorphism

Funding:

Resource Name: Human Mitochondrial Protein Database

Resource ID: SCR_002913

Alternate IDs: nif-0000-02969

Record Creation Time: 20220129T080216+0000

Record Last Update: 20250426T055603+0000

Ratings and Alerts

No rating or validation information has been found for Human Mitochondrial Protein Database.

No alerts have been found for Human Mitochondrial Protein Database.

Data and Source Information

Source: SciCrunch Registry

Usage and Citation Metrics

We found 2 mentions in open access literature.

Listed below are recent publications. The full list is available at NIF.

Yang JS, et al. (2013) Spatial and functional organization of mitochondrial protein network. Scientific reports, 3, 1403.

Wong LJ, et al. (2010) Current molecular diagnostic algorithm for mitochondrial disorders. Molecular genetics and metabolism, 100(2), 111.