Frataxin/FXN Protein, Cynomolgus (His)

Cat. No.:	HY-P71593
Synonyms:	FXN; FRDA1; QnpA-13971; Frataxin; mitochondrial; Fxn; EC 1.16.3.1) [Cleaved into: Frataxin intermediate form; Frataxin mature form]
Species:	Cynomolgus
Source:	E. coli
Accession:	Q8HXX9 (S81-A210)
Gene ID:	102120656
Molecular Weight:	Approximately 22 kDa.The reducing (R) protein migrates as 22 kDa in SDS-PAGE maybe due to relative charge.

PROPERTIES

AA Sequence	S G T L G H P G S L D D T T Y E R L A E E T L D S L A E F F E D L A D K P Y T F E D Y D V S F G S G V L T V K L G G D L G T Y V I N K Q T P N K Q I W L S S P S S G P K R Y D R T G K N W V Y S H D G V S L H E L L G A E L T K A L K T K L D L S S L A Y S G K D A
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 μm sterile filtered PBS, 6% Trehalose, pH 7.4.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O.
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	Frataxin (FXN) Protein serves as an activator in the persulfide transfer process within the core iron-sulfur cluster (ISC) assembly complex, crucial for [2Fe-2S] cluster assembly. It facilitates the acceleration of sulfur transfer from NFS1 persulfide intermediate to ISCU and small thiols like L-cysteine and glutathione, leading to persulfuration and sulfide release. During [2Fe-2S] cluster assembly, FXN binds ferrous ions and is released upon the addition of both L-cysteine and reduced FDX2. The ISC assembly complex, consisting of FXN, NFS1, LYRM4, NDUFAB1, and FDX2, initiates de novo synthesis of [2Fe-2S] clusters, transferring them to chaperone proteins such as HSCB, HSPA9, and GLRX5. FXN may play a role in protecting

against iron-catalyzed oxidative stress, displaying ferroxidase activity in its oligomeric form. It could potentially store large amounts of iron in the form of a ferrihydrite mineral through oligomerization, although the physiological relevance remains uncertain. FXN may function as an iron chaperone protein, safeguarding the aconitase [4Fe-4S]2+ cluster from disassembly and promoting enzyme reactivation. Additionally, it might serve as a high-affinity iron-binding partner for FECH, contributing to the terminal step in mitochondrial heme biosynthesis. FXN modulates the RNA-binding activity of ACO1, potentially participates in cytoplasmic iron-sulfur protein biogenesis, and could contribute to oxidative stress resistance and overall cell survival.

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