

CISD1 Protein, Human (His)

Cat. No.:	HY-P76262
Synonyms:	CDGSH iron-sulfur domain-containing protein 1; MitoNEET; C10orf70; ZCD1
Species:	Human
Source:	E. coli
Accession:	Q9NZ45/NP_060934.1 (K32-T108)
Gene ID:	55847
Molecular Weight:	Approximately 14 kDa.

PROPERTIES

AA Sequence	K R F Y V K D H R N K A M I N L H I Q K D N P K I V H A F D M E D L G D K A V Y C R C W R S K K F P F C D G A H T K H N E E T G D N V G P L I I K K K E T
Appearance	Lyophilized powder
Formulation	Lyophilized from sterile PBS, pH 7.4.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH ₂ O. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
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	<p>The CISD1 protein functions as an L-cysteine transaminase, facilitating the reversible transfer of the amino group from L-cysteine to the alpha-keto acid 2-oxoglutarate. This enzymatic process results in the formation of 2-oxo-3-sulfanylpropanoate and L-glutamate. The catalytic cycle is orchestrated in the presence of the pyridoxal 5'-phosphate (PLP) cofactor, which initiates transamination by forming an internal aldimine with the epsilon-amino group of the active site Lys-55 residue on the enzyme (PLP-enzyme aldimine). This internal aldimine is subsequently displaced by the formation of an external aldimine with the substrate amino group (PLP-L-cysteine aldimine). The external aldimine undergoes deprotonation, leading to the formation of a carbanion intermediate. In the presence of 2-oxoglutarate, this intermediate regenerates PLP, ultimately yielding the final products 2-oxo-3-sulfanylpropanoate and L-glutamate. The active site lysine residue is implicated in controlling proton transfer in the carbanion intermediate, while PLP stabilizes the carbanion structure through electron delocalization, a phenomenon known as the electron sink effect. Additionally, CISD1 plays a</p>
-------------------	---

crucial role in regulating the maximal capacity for electron transport and oxidative phosphorylation and may be involved in iron-sulfur cluster shuttling and/or redox reactions. Notably, it can transfer the [2Fe-2S] cluster to an apo-acceptor protein, particularly under oxidative stress conditions, suggesting a role as a redox sensor that regulates mitochondrial iron-sulfur cluster assembly and iron trafficking.

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA