COX5B Protein, Human (His)

Cat. No.:	HY-P75686
Synonyms:	Cytochrome c oxidase subunit 5B, mitochondrial; COX5B
Species:	Human
Source:	E. coli
Accession:	P10606 (A32-H129)
Gene ID:	1329
Molecular Weight:	Approximately 14 kDa

PROPERTIES

AA Sequence	A S G G G V P T D E E Q A T G L E R E I M L A A K K G L D P Y N V L A P K G A S G T R E D P N L V P S I S N K R I V G C I C E E D N T S V V W F W L H K G E A Q R C P R C G A H Y K L V P Q Q L A H
Biological Activity	Immobilized Recombinant Human COX5B at 2 μg/mL (100 μL/well) can bind COX5B antibody. The ED_{50} for this effect is 0.2333 μg/mL.
Appearance	Lyophilized powder
Formulation	Lyophilized from a 0.2 μm filtered solution of PBS, pH 7.4, 10% Glycerin.
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	COX5B, an integral component of the cytochrome c oxidase, stands as the final enzyme in the mitochondrial electron transport chain, orchestrating oxidative phosphorylation. This respiratory chain encompasses three crucial multisubunit complexes—succinate dehydrogenase (complex II, CII), ubiquinol-cytochrome c oxidoreductase (cytochrome b-c1 complex, complex III, CIII), and cytochrome c oxidase (complex IV, CIV)—cooperatively facilitating the transfer of electrons derived from NADH and succinate to molecular oxygen. This intricate process generates an electrochemical gradient across the inner membrane, propelling transmembrane transport and driving ATP synthase. Cytochrome c oxidase serves as the linchpin of the respiratory chain, catalyzing the reduction of oxygen to water. Electrons, originating from reduced

cytochrome c in the intermembrane space, traverse through intermediates like the dinuclear copper A center (CU(A)) in subunit 2 and heme A in subunit 1. Ultimately, this electron transfer converges at the active site in subunit 1, forming a binuclear center (BNC) composed of heme A3 and copper B (CU(B)). The BNC efficiently reduces molecular oxygen to two water molecules, utilizing four electrons from cytochrome c in the intermembrane space and four protons from the mitochondrial matrix. COX5B plays a pivotal role in energy metabolism, contributing significantly to the intricate processes of oxidative phosphorylation.

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