

CYP11B2 Protein, Human (His-SUMO)

Cat. No.:	HY-P72163
Synonyms:	ALDOS; Aldosterone synthase; Aldosterone-synthesizing enzyme; C11B2_HUMAN; CYP11B2; CYPX1B2; Cytochrome P-450Aldo; Cytochrome P-450C18; Cytochrome P450 11B2; Cytochrome P450 11B2; mitochondrial; mitochondrial; P-450Aldo; P-450C18; Steroid 18-hydroxylase
Species:	Human
Source:	E. coli
Accession:	P19099 (G25-N503)
Gene ID:	1585
Molecular Weight:	66 kDa. The reducing(R) protein migrates as 66 kDa in SDS-PAGE may be due to relative charge.

PROPERTIES

AA Sequence

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G T R A A R A P R T   V L P F E A M P Q H   P G N R W L R L L Q   I W R E Q G Y E H L
H L E M H Q T F Q E   L G P I F R Y N L G   G P R M V C V M L P   E D V E K L Q Q V D
S L H P C R M I L E   P W V A Y R Q H R G   H K C G V F L L N G   P E W R F N R L R L
N P D V L S P K A V   Q R F L P M V D A V   A R D F S Q A L K K   K V L Q N A R G S L
T L D V Q P S I F H   Y T I E A S N L A L   F G E R L G L V G H   S P S S A S L N F L
H A L E V M F K S T   V Q L M F M P R S L   S R W I S P K V W K   E H F E A W D C I F
Q Y G D N C I Q K I   Y Q E L A F N R P Q   H Y T G I V A E L L   L K A E L S L E A I
K A N S M E L T A G   S V D T T A F P L L   M T L F E L A R N P   D V Q Q I L R Q E S
L A A A A S I S E H   P Q K A T T E L P L   L R A A L K E T L R   L Y P V G L F L E R
V V S S D L V L Q N   Y H I P A G T L V Q   V F L Y S L G R N A   A L F P R P E R Y N
P Q R W L D I R G S   G R N F H H V P F G   F G M R Q C L G R R   L A E A E M L L L L
H H V L K H F L V E   T L T Q E D I K M V   Y S F I L R P G T S   P L L T F R A I N
  
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Biological Activity The enzyme activity of this recombinant protein is testing in progress, we cannot offer a guarantee yet.

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.

Reconstitution It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH₂O.

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

The CYP11B2 protein, a cytochrome P450 monooxygenase, plays a crucial role in catalyzing the biosynthesis of aldosterone, the primary mineralocorticoid responsible for maintaining salt and water homeostasis in the human body. Its involvement in blood pressure regulation, arterial hypertension, and heart failure underscores its significance in cardiovascular health. Mechanistically, CYP11B2 orchestrates three sequential oxidative reactions of 11-deoxycorticosterone, involving 11-beta hydroxylation and two successive oxidations at C18, ultimately resulting in the formation of aldosterone. The enzyme utilizes molecular oxygen to insert one oxygen atom into the substrate, with the second oxygen atom reduced into a water molecule. This process is facilitated by a two-protein mitochondrial transfer system comprising flavoprotein FDXR (adrenodoxin/ferredoxin reductase) and nonheme iron-sulfur proteins FDX1 or FDX2 (adrenodoxin/ferredoxin), with two electrons supplied by NADPH. Additionally, CYP11B2 may be implicated in the androgen metabolic pathway, offering further insights into its diverse physiological roles.

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

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