

CYP21A2 Protein, Human (His)

Cat. No.:	HY-P72164
Synonyms:	CYP21; 21 OHase; 21-OHase; CA21H ; CAH1; CP21A_HUMAN; CPS1; CYP21A 2; CYP21A2; CYP21B; Cytochrome P-450c21; Cytochrome P450 21; Cytochrome P450 C21B; Cytochrome P450 XXI; Cytochrome P450; family 21; subfamily A; polypeptide 2; Cytochrome P450; subfamily XXIA steroid 21 hydroxylase;
Species:	Human
Source:	E. coli
Accession:	P08686 (M1-Q494)
Gene ID:	1589
Molecular Weight:	Approximately 59.9 kDa

PROPERTIES

AA Sequence	<pre> M L L L G L L L L P L L A G A R L L W N W W K L R S L H L P P L A P G F L H L L Q P D L P I Y L L G L T Q K F G P I Y R L H L G L Q D V V V L N S K R T I E E A M V K K W A D F A G R P E P L T Y K L V S K N Y P D L S L G D Y S L L W K A H K K L T R S A L L L G I R D S M E P V V E Q L T Q E F C E R M R A Q P G T P V A I E E E F S L L T C S I I C Y L T F G D K I K D D N L M P A Y Y K C I Q E V L K T W S H W S I Q I V D V I P F L R F F P N P G L R R L K Q A I E K R D H I V E M Q L R Q H K E S L V A G Q W R D M M D Y M L Q G V A Q P S M E E G S G Q L L E G H V H M A A V D L L I G G T E T T A N T L S W A V V F L L H H P E I Q Q R L Q E E L D H E L G P G A S S S R V P Y K D R A R L P L L N A T I A E V L R L R P V V P L A L P H R T T R P S S I S G Y D I P E G T V I I P N L Q G A H L D E T V W E R P H E F W P D R F L E P G K N S R A L A F G C G A R V C L G E P L A R L E L F V V L T R L L Q A F T L L P S G D A L P S L Q P L P H C S V I L K M Q P F Q V R L Q P R G M G A H S P G Q N Q </pre>
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 solution of Tris-based buffer, 50% Glycerol.
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.
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 CYP21A2 protein, a cytochrome P450 monooxygenase, plays a pivotal role in adrenal steroidogenesis by catalyzing the hydroxylation at C-21 of progesterone and 17alpha-hydroxyprogesterone. This enzymatic activity leads to the formation of crucial intermediate metabolites, namely 11-deoxycorticosterone and 11-deoxycortisol, which are integral components in the biosynthetic pathway of mineralocorticoids and glucocorticoids. Mechanistically, CYP21A2 utilizes molecular oxygen, inserting one oxygen atom into the substrate and reducing the second into a water molecule. The necessary electrons for this process are provided by NADPH via cytochrome P450 reductase (CPR; NADPH-ferrihemoprotein reductase). These biochemical transformations orchestrated by CYP21A2 are essential for the synthesis of key adrenal steroids, contributing significantly to the regulation of mineralocorticoid and glucocorticoid production in the adrenal cortex.

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

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