

CYP21A2 Protein, Human (P.pastoris, His)

Cat. No.:	HY-P71728
Synonyms:	CYP21; 21 OHase; CYP21A2; Steroid 21 monooxygenase; Steroid 21-hydroxylase
Species:	Human
Source:	P. pastoris
Accession:	P08686 (1M-494Q)
Gene ID:	1589
Molecular Weight:	Approximately 57.9 kDa

PROPERTIES

AA Sequence

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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
  
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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 after extensive dialysis against solution in 20 mM Tris-HCl, 0.5 M NaCl, 6% Trehalose, pH 8.0

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 CYP21A2 protein, a cytochrome P450 monooxygenase, plays a pivotal role in adrenal steroidogenesis by catalyzing the hydroxylation at C-21 of progesterone and 17 α -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.

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