

Recombinant Rat CP17A Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP52271

Size: 10ug, 100ug

Protein Name: Steroid 17-alpha-hydroxylase/17,20 lyase (EC 1.14.14.19) (17-alpha-hydroxyprogesterone aldolase) (EC 1.14.14.32) (CYPXVII) (Cytochrome P450 17A1) (Cytochrome P450-C17) (Cytochrome P450c17) (Steroid 17-alpha-monooxygenase)

Synonym: Cyp17a1, Cyp17

UniProt ID: P11715

UniProt Link: www.uniprot.org/uniprotkb/P11715/entry

Species Source: Rat

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 507 AA

Molecular Weight: 57 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MWELVGLLLLILAYFFWVKS KTPGAKLPRSLPSLPLVGSLPFLPRRGHMHVNFFKLQEKYGPISLRL
GTTTTVIIGHYQLAREVLIKKGKEFSGRPQMVTQSLLSDQGKGVAFADAGSSWHLHRKLVFSTFSLF
KDGQKLEKLCQEAKSLCDMMLAHDKESIDLSTPIFMSVTNIIICAFNISYEKNDPKLTAIKTFTEGIVD
ATGDRNLVDIFPWLTIFPNKGLEVIKGYAKVRNEVLTGIFEKCREKFDSQSISSLTDILIAKMNSDNN
NSCEGRDPDVFSDRHILATVGDI FGAGIETTTTLKWLAFVHNPEVKKKIQKEIDQYVGFSRTPTFN
DRSHLLMLEATIREVLRIRPVAPMLIPHKANVDSSIGFTVPK DTHVVVNLWALHHDENEWDQPDQF
MPERFLDPTGSHLITPTQSYLPFGAGPRSCIGEALARQELFVFTALLLQRFDLVDSDDKQLPRLEGDP
KVVFLIDPFVKVITVRQAWMDAQAEVST

3. Buffer Composition

Liquid format: PBS-based buffer containing 50% glycerol. Glycerol concentration can be customized upon customer request; please state special requirements when placing your order.

Lyophilized format: Buffer before lyophilization is PBS supplemented with 6% trehalose.

4. Storage Conditions

Upon receipt, store the product at -20 °C or -80 °C. Aliquot the product for on-demand use to preserve protein activity and prevent denaturation and inactivation caused by repeated freeze-thaw cycles.

5. Product Description

This product is recombinant Steroid 17-alpha-hydroxylase/17,20 lyase (EC 1.14.14.19) (17-alpha-hydroxyprogesterone aldolase) (EC 1.14.14.32) (CYPXVII) (Cytochrome P450 17A1) (Cytochrome P450-C17) (Cytochrome P450c17) (Steroid 17-alpha-monooxygenase) produced using the HEK293T eukaryotic cell expression system. It is suitable for in-vitro functional assays, protein-protein interaction studies, antibody preparation and other biomedical research applications.

Protein Function: A cytochrome P450 monooxygenase involved in corticoid and androgen biosynthesis. Catalyzes 17-alpha hydroxylation of C21 steroids, which is common for both pathways. A second oxidative step, required only for androgen synthesis, involves an acyl-carbon cleavage. The 17-alpha hydroxy intermediates, as part of adrenal glucocorticoids biosynthesis pathway, are precursors of cortisol. Hydroxylates steroid hormones, pregnenolone and progesterone to form 17-alpha hydroxy metabolites, followed by the cleavage of the C17-C20 bond to form C19 steroids, dehydroepiandrosterone (DHEA) and androstenedione. Has 16-alpha hydroxylase activity. Catalyzes 16-alpha hydroxylation of 17-alpha hydroxy pregnenolone, followed by the cleavage of the C17-C20 bond to form 16-alpha-hydroxy DHEA. Also 16-alpha hydroxylates androgens, relevant for estriol synthesis. Mechanistically, uses molecular oxygen inserting one oxygen atom into a substrate, and reducing the second into a water molecule, with two electrons provided by NADPH via cytochrome P450 reductase (CPR; NADPH-ferrihemoprotein reductase).

Subcellular Localization: Endoplasmic reticulum membrane . Microsome membrane .

6. Notes

- Avoid repeated freeze-thaw cycles to maintain protein stability and biological activity.
- Please specify special buffer- composition requirements at the time of order placement.
- For research use only. Not intended for clinical diagnosis, therapeutic use or commercial manufacturing.