

Recombinant Rat CP4F4 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP52390

Size: 10ug, 100ug

Protein Name: Cytochrome P450 4F4 (CYP1VF4) (Leukotriene-B4 20-monooxygenase) (EC 1.14.14.94)

Synonym: Cyp4f4

UniProt ID: P51869

UniProt Link: www.uniprot.org/uniprotkb/P51869/entry

Species Source: Rat

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 522 AA

Molecular Weight: 60 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MPQLDLSWLGLRLETSLPWLLLLLIGASWLLVRVLTQTYIFYRTYQHLCDFPQPPKWNWFLGHLGMI
TPTEQGLKQVTKLVATYPQGFMTWLGPILPIITLCHPDVIRSVLSASASVALKEVIFYSFLKPWLGDGL
LLSDGDKWSCHRRMLTPAFHFNILKPYVKIFNDSTNIMHAKWQDLASGGSARLDMFKNISLMTLDSL
QKCVFSFDSNCQEKPEYISAILELSALVAKRYQQLLLHTDSLYQLTHNGRRFHKACKLVHNFTDAVI
QGRRRALPSQHEDDILKAKARSKTLDLDFIDVLLLTDEEDGKELSDIRAEADTFMFEGHDTTASGLS
WILYNLARHPEYQERCQEVRELLRDRETEIEWDDLAQLPFLTMCIKESLRLHPPVTVISRRCTQDI
VLPDGRVIPKGVICINIIFATHHNPTVWPDPEVYDPFRFDPENIKDRSPLAFIPFSAGPRNCIGQTFAMN
EMKVALALTLLRFRVLPDDKEPRRKPELILRAEGLWLRVEPLSTQ

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 Cytochrome P450 4F4 (CYPIVF4) (Leukotriene-B4 20-monooxygenase) (EC 1.14.14.94) 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 the metabolism of arachidonic acid and its oxygenated derivatives (PubMed:14634044, PubMed:17418803, PubMed:9344476). 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) (PubMed:14634044, PubMed:17418803, PubMed:9344476). Participates in the conversion of arachidonic acid to omega-hydroxyeicosatetraenoic acid (20-HETE), a signaling molecule acting both as vasoconstrictive and natriuretic with overall effect on arterial blood pressure (PubMed:14634044). Hydroxylates the terminal carbon (omega-hydroxylation) of inflammatory lipid mediators, including prostaglandin (PG) A1, PGE1 and leukotriene B4 (LTB4), and may play a role in inactivation of these oxylipins during the resolution of inflammation (PubMed:14634044, PubMed:17418803, PubMed:9344476).

Subcellular Localization: Endoplasmic reticulum membrane; Multi-pass membrane protein . Microsome membrane; Multi-pass membrane protein .

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.