9051 Mira Mesa Blvd, #910094
San Diego, CA 92191
Tel: 760-390-3989

POR (43-677) Human

P450 Oxidoreductase Human Recombinant
RCP1690

Product Overview

Name	POR (43-677) Human
Description	
P450 Oxidoreductase Human Recombinant	
Accession (Primary)	P16435
Synonyms	
P450 (Cytochrome) Oxidoreductase, EC 1.6.2.4, CYPOR, P450R, CPR, NADPH-Dependent Cytochrome P450 Reductase, NADPH--Cytochrome P450 Reductase, NADPH--cytochrome P450 reductase.	
Source	
Sf9, Baculovirus cells.	
Physical Appearance	
Sterile filtered colorless solution.	
Formulation	
POR protein solution (0.5mg/ml) contains 10% Glycerol and Phosphate-Buffered Saline (pH 7.4).	
Stability	
Store at 4°C if entire vial will be used within 2-4 weeks. Store, frozen at -20°C for longer periods of time. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA). Avoid multiple freeze-thaw cycles.	
Purity	
Greater than 95.0% as determined by SDS-PAGE.	
Amino acid sequence	
MLFRKKKEEV PEFTKIQTLT SSVRESSFVE KMKKTGRNII VFYGSQTGTA EEFANRLSKD AHRYGMRGMS ADPEEYDLAD LSSLPEIDNA LVVFCMATYG EGDPTDNAQD FYDWLQETDV DLSGVKFAVF GLGNKTYEHF NAMGKYVDKR LEQLGAQRIF ELGLGDDDGN LEEDFITWRE QFWPAVCEHF GVEATGEESS IRQYELVVHT DIDAAKVYMG EMGRLKSYEN QKPPFDAKNP FLAAVTTNRK LNQGTERHLM HLELDISDSK IRYESGDHVA VYPANDSALV NQLGKILGAD LDVVMSLNNL DEESNKKHPF PCPTSYRTAL TYYLDITNPP RTNVLYELAQ YASEPSEQEL LRKMASSSGE GKELYLSWVV EARRHILAIL QDCPSLRPPI DHLCELLPRL QARYYSIASS SKVHPNSVHI CAVVVEYETK AGRINKGVAT NWLRAKEPAG ENGGRALVPM FVRKSQFRLP FKATTPVIMV GPGTGVAPFI GFIQERAWLR QQGKEVGETL LYYGCRRSDE DYLYREELAQ FHRDGALTQL NVAFSREQSH KVYVQHLLKQ DREHLWKLIE GGAHIYVCGD ARNMARDVQN TFYDIVAELG AMEHAQAVDY IKKLMTKGRY	

SLDVWS HHHH HH .

Biological Activity

Specific activity is > 1,500 pmol/min/mg. Defined by the amount of enzyme that reduction of 1 pmole cytochrome-C by NADPH/min. at pH-8 25C.

Background

P450 Oxidoreductase (POR) is a vital enzyme that plays a crucial role in the electron transfer system, specifically in the cytochrome P450 (CYP) enzyme family. POR acts as an electron donor for various CYP enzymes involved in drug metabolism, steroid biosynthesis, and detoxification processes. This research aims to explore the function, regulation, and significance of POR protein in human cells, shedding light on its role in maintaining cellular homeostasis and drug metabolism. Function of POR Protein: POR protein serves as an essential component in the redox reactions of the CYP enzymes. It transfers electrons from NADPH to the CYP enzymes, allowing them to catalyze a wide range of reactions involved in the metabolism of endogenous compounds, drugs, and toxins. Through its electron transfer function, POR enables the activation or inactivation of substrates, contributing to the regulation of cellular processes such as hormone synthesis, drug clearance, and xenobiotic detoxification. Regulation of POR Protein: The expression and activity of POR protein are tightly regulated to ensure proper functioning of the CYP enzymes. Several factors influence POR expression, including genetic variations, environmental stimuli, and hormonal signals. Transcriptional regulation of POR involves binding of specific transcription factors to its promoter region. Additionally, post-translational modifications, such as phosphorylation and protein-protein interactions, modulate POR activity, influencing its electron transfer efficiency and interaction with CYP enzymes. Role of POR Protein in Drug Metabolism: One of the prominent functions of POR protein is its involvement in drug metabolism. POR collaborates with CYP enzymes in the biotransformation of a wide array of drugs, converting them into more soluble and easily excretable forms. The interplay between POR and CYP enzymes determines the pharmacokinetics and therapeutic efficacy of numerous drugs. Understanding the role of POR in drug metabolism is crucial for predicting drug-drug interactions, optimizing drug dosing, and minimizing the risk of adverse reactions. Significance of POR Protein in Disease States: Emerging evidence suggests that POR protein dysregulation can contribute to various disease states. Mutations in the POR gene have been linked to disorders such as Antley-Bixler syndrome and disordered steroidogenesis, highlighting the critical role of POR in development and endocrine function. Moreover, altered POR expression and activity have been implicated in drug resistance and toxicity, as well as in the pathogenesis of certain cancers. Conclusion: The investigation of P450 Oxidoreductase (POR) protein in human cells provides valuable insights into its function, regulation, and significance in various physiological and pathological processes. Understanding the interplay between POR and CYP enzymes is essential for deciphering drug metabolism pathways, predicting drug interactions, and developing personalized therapeutic strategies. Further research is warranted to unravel the intricate mechanisms governing POR activity and its potential as a therapeutic target.

Precautions

POR (43-677) Human is for research use only and not for use in diagnostic or therapeutic procedures.

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Target Information: (P16435)

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governing POR activity and its potential as a therapeutic target.