Active Cytochrome P450 2E1 (CYP2E1)

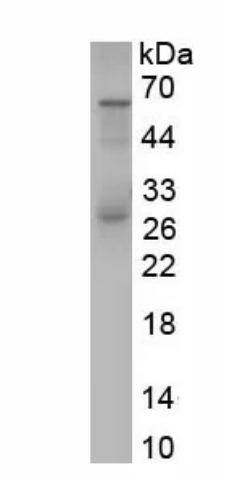
Catalog#:PEH12576

概述（Summary）

别称（Alternative Names）	CPE1; CYPIIE1; P450-J; P450C2E; 4-nitrophenol 2-hydroxylase; Cytochrome P450 Family 2 Subfamily E 1; Cytochrome P450,Subfamily IIE(Ethanol-Inducible)Polypeptide 1
纯度（Purity）	Greater than 90% as determined by reducing SDS-PAGE.
内毒素（Endotoxin level）	Please contact with the lab for this information
蛋白构建（Construction）	【Pro36-Val271】
Accession #	P05181
表达宿主（Host）	E.coli
种属（Species）	Homo sapiens (Human)
预测分子量（Predicted MW）	57.6 kDa
制剂（Form）	Lyophilized from a 0.2 μm filtered solution of PBS, pH7.4, containing 0.01% SKL, 1mM DTT, 5% Trehalose and Proclin300.
运输方式（Shipping）	The product is shipped with ice bag. Upon receipt, store it immediately at the temperature listed below.
稳定性&储存（Stability &Storage）	12 months at -20°C to -80°C in lyophilized state.6 months at -20°C to -80°C under sterile conditions after reconstitution.7-10 days at 2°C to 8°C under sterile conditions after reconstitution.Please minimize freeze-thaw cycles.
复溶（Reconstitution）	Reconstitute in 10mM PBS (pH7.4) to a concentration of 0.1-1.0 mg/mL. Do not vortex.
背景介绍（References）	A cytochrome P450 monooxygenase involved in the metabolism of fatty acids. 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 (NADPH--hemoprotein reductase). Catalyzes the hydroxylation of carbon-hydrogen bonds. Hydroxylates fatty acids specifically at the omega-1 position displaying the highest catalytic activity for saturated fatty acids. May be involved in the oxidative metabolism of

xenobiotics.

电泳图（SDS-PAGE image）



Greater than 90% as determined by reducing SDS-PAGE.

活性图（Bioactivity image）

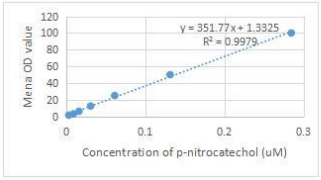


Figure 1. The standard curve of p-nitrocatechol

OD535nm	p-nitrocatechol (product) uM
0.2847	100
0.1315	50
0.0614	25
0.031	12.5
0.0163	6.25
0.0094	3.125
0.0033	1.5625

One unit of enzyme activity is defined as the 1 µg of enzyme required to convert 1 pmol of p-nitrophenol to p-nitrocatechol in 1 min at 37°C. The specific activity of recombinant human CYP2E1 is 3.7 pmol/min/µg.

Specific Activity (pmol/min/µg)= $\frac{\Delta OD * F}{T * N}$

△OD=Adjusted for Substrate Blank

F=Conversion Factor(convert from standard curve of p-nitrocatechol)

T= Time

N=Amount of enzyme

The cytochrome P450 enzyme CYP2E1 catalyzes the oxidative metabolism of many solvents and other small organic molecules. CYP2E1 is expressed in adult and fetal human liver in addition to extrahepatic tissues such as lung and placenta. Treatment of primary cultures of human hepatocytes with ethanol induces CYP2E1 protein, and this is consistent with the finding that hepatic CYP2E1 protein and mRNA levels are increased in individuals with alcoholism. Although only a few drugs (e.g., acetaminophen have been identified as substrates for CYP2E1, many low molecular weight procarcinogens are activated by this cytochrome P450 (P450). Chlorzoxazone 6-hydroxylation, N-nitrosodimethylamine N-demethylation and p-nitrophenol hydroxylation can be used to measure the catalytic activity of CYP2E1. Thus, the recombinant human CYP2E1 activity was measured by its ability to hydroxylate p-nitrophenol to p-nitrocatechol. The reaction was performed in 50 mM potassium phosphate, pH 7.4 (Assay Buffer), initiated by addition 20 µL of 500 ug/ml CYP2E1 to 10 µL of 5 mM substrate p-nitrophenol and 30 ul of 26 mM NADPH in a total volume of 500 ul. Incubated at 37 ℃ for 30min, then read at a wavelength of 535 nm after acidification of the reaction mixture with trichloroacetic acid followed by neutralization using 2 M NaOH.

注意事项（Note）

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