Active Recombinant Mouse Cyp1b1 Protein

Cat. No. Cyp1b1-123M **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant mouse Cyp1b1 protein and CYP-reductase without tag were coexpressed in E. coli.
Species	Mouse
Source	E.coli
Description	A cytochrome P450 monooxygenase involved in the metabolism of various endogenous substrates, including fatty acids, steroid hormones and vitamins. 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)). Exhibits catalytic activity for the formation of hydroxyestrogens from 17beta-estradiol (E2), namely 2- and 4-hydroxy E2. Metabolizes testosterone and progesterone to B or D ring hydroxylated metabolites. May act as a major enzyme for all-trans retinoic acid biosynthesis in extrahepatic tissues. Catalyzes two successive oxidative transformation of all-trans retinol to all-trans retinal and then to the active form all-trans retinoic acid. Catalyzes the epoxidation of double bonds of certain PUFA. Converts arachidonic acid toward epoxyeicosatrienoic acid (EpETrE) regioisomers, 8,9-, 11,12-, and 14,15- EpETrE, that function as lipid mediators in the vascular system. Additionally, displays dehydratase activity toward oxygenated eicosanoids hydroperoxyeicosatetraenoates (HpETEs). This activity is independent of cytochrome P450 reductase, NADPH, and O2. Also involved in the oxidative metabolism of xenobiotics, particularly converting polycyclic aromatic hydrocarbons and heterocyclic

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	aryl amines procarcinogens to DNA-damaging products. Plays an important role in retinal vascular development. Under ambient/hyperoxic O2 conditions, promotes angiogenesis and capillary morphogenesis of retinal endothelial cells and pericytes, likely by metabolizing the oxygenated products symptomatic of oxidative stress. Also, contributes to oxidative homeostasis and ultrastructural organization and function of trabecular meshwork tissue through modulation of POSTN expression.
Bio-activity	Cytochrome c Reductase Activity: 512 nmol/min/mg protein P450 Activity Data(Unless otherwise stated, all assays are carried out at 37 centigrade in 50 mM potassium phosphate buffer (pH 7.4) containing 5mM magnesium chloride and an NADPH generating system [5 mM glucose 6-phosphate, 1 mM NADP+, 1 U/ml glucose 6-phosphate dehydrogenase]) Activity: 7-ethoxyresorufin O-deethylase Linear with time up to: 5 min(Determined at 0.1 μM substrate, using a P450 concentration of 1 pmol/ml) Linear with P450 up to: 8 pmol/ml(Determined at 0.1 μM substrate, using an incubation time of 1 min) Vmax: 17 pmol/min/pmol CYP Km: 0.08 μM
Usage	For laboratory (research) purposes only
Storage	Store at -80 centigrade. Avoid frequent temperature changes. Thaw on ice.
Concentration	P450 Concentration: 1.4 nmol/ml Protein Concentration: 8.2 mg/ml Specific P450 Content: 171 pmol/mg protein
Storage Buffer	50 mM Tris-acetate (pH 7.6), 250 mM sucrose, 0.25 mM EDTA

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GENE INFORMATION

Gene Name	Cyp1b1 cytochrome P450, family 1, subfamily b, polypeptide 1 [Mus musculus (house mouse)]
Official Symbol	Cyp1b1
Synonyms	Cyp1b1; cytochrome P450, family 1, subfamily b, polypeptide 1; CP1B; CYPIB1; P4501b1; cytochrome P450 1B1; cytochrome P450, 1b1, benz[a]anthracene inducible; cytochrome P450CMEF; cytochrome P450EF; hydroperoxy icosatetraenoate dehydratase
Gene ID	13078
mRNA Refseq	NM_009994
Protein Refseq	NP_034124
UniProt ID	Q64429

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