Active Recombinant Dog CYP1A1 Protein

Cat. No. CYP1A1-112D **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant dog CYP1A1 protein and human CYP-reductase without tag were coexpressed in E. coli.
Species	Dog
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 (CPR; NADPH-ferrihemoprotein reductase). Catalyzes the hydroxylation of carbon-hydrogen bonds. Exhibits high catalytic activity for the formation of hydroxyestrogens from estrone (E1) and 17beta-estradiol (E2), namely 2-hydroxy E1 and E2, as well as D-ring hydroxylated E1 and E2 at the C15alpha and C16alpha positions. Displays different regioselectivities for polyunsaturated fatty acids (PUFA) hydroxylation. Catalyzes the epoxidation of double bonds of certain PUFA. Converts arachidonic acid toward epoxyeicosatrienoic acid (EET) regioisomers, 8,9-, 11,12-, and 14,15-EET, that function as lipid mediators in the vascular system. Displays an absolute stereoselectivity in the epoxidation of eicosapentaenoic acid (EPA) producing the 17(R),18(S) enantiomer. May play an important role in 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. May also participate in eicosanoids

Tel: 1-631-559-9269 1-516-512-3133
Email: info@creative-biomart.com Fax: 1-631-938-8127
45-1 Ramsey Road, Shirley, NY 11967, USA

	metabolism by converting hydroperoxide species into oxo metabolites (lipoxygenase-like reaction, NADPH-independent).
Bio-activity	Cytochrome c Reductase Activity: 375 nmol/min/mg protein P450 Activity Data(Unless otherwise stated, all assays are carried out at 37 centigrade in 100 mM potassium phosphate buffer (pH 7.4) containing 5 mM magnesium chloride and an NADPH generating system [5 mM glucose 6-phosphate, 1 mM NADP+, 1 U/ml glucose 6-phosphate dehydrogenase]) Activity: 7-ethoxycoumarin O-deethylase Linear with time up to: 6 min(Determined at 5 μM substrate, using a P450 concentration of 0.5 pmol/ml) Linear with P450 up to: 2.5 pmol/ml(Determined at 5 μM substrate, using an incubation time of 5 min) Vmax: 8.1 pmol/min/pmol CYP Km: 7.2 μM
Usage	For laboratory (research) purposes only
Storage	Store at -80 centigrade. Avoid frequent temperature changes. Thaw on ice.
Concentration	P450 Concentration: 10.0 nmol/ml Protein Concentration: 11.0 mg/ml Specific P450 Content: 906 pmol/mg protein
Storage Buffer	50 mM Tris-acetate (pH 7.6), 250 mM sucrose, 0.25 mM EDTA

GENE INFORMATION

Gene Name	CYP1A1 cytochrome P450 family 1 subfamily A member 1 [Canis lupus familiaris (dog)]

Tel: 1-631-559-9269 1-516-512-3133
Email: info@creative-biomart.com Fax: 1-631-938-8127
45-1 Ramsey Road, Shirley, NY 11967, USA

Official Symbol	CYP1A1
Synonyms	CYP1A1; cytochrome P450 family 1 subfamily A member 1; DAH1; CYPIA1; cytochrome P450 1A1; CYP1A1 type 1; CYP1A1 type 2; Cytochrome P450 1A1; cytochrome P450, family 1, subfamily A, polypeptide 1
Gene ID	100686778
UniProt ID	P56590

Tel: 1-631-559-9269 1-516-512-3133
Email: info@creative-biomart.com Fax: 1-631-938-8127
45-1 Ramsey Road, Shirley, NY 11967, USA