Recombinant Human CYP1A2

Cat. No. CYP1A2-121H **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant Human CYP1A2 was prepared from insect cells that were infected with baculovirus containing the cDNA for human CYP1A2 and rabbit cytochrome P450 reductase.
Species	Human
Source	Insect Cells
Description	This gene encodes a member of the cytochrome P450 superfamily of enzymes. The cytochrome P450 proteins are monooxygenases which catalyze many reactions involved in drug metabolism and synthesis of cholesterol, steroids and other lipids. The protein encoded by this gene localizes to the endoplasmic reticulum and its expression is induced by some polycyclic aromatic hydrocarbons (PAHs), some of which are found in cigarette smoke. The enzyme"s endogenous substrate is unknown; however, it is able to metabolize some PAHs to carcinogenic intermediates. Other xenobiotic substrates for this enzyme include caffeine, aflatoxin B1, and acetaminophen. The transcript from this gene contains four Alu sequences flanked by direct repeats in the 3" untranslated region.
Amount	0.5 nmol, based on spectral P450 content
Spectral P450Content	1.1 nmol/mL
Total Protein	8.66 mg/mL as determined with the BCA assay using BSA as the standard

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Concentration	
Storagebuffer	100 mM potassium phosphate (pH 7.4), 20% glycerol, 1 mM DTT and 0.1 mM EDTA
Cytochrome P450 ReductaseActivity	1.82 μmol of cytochrome c reduced per minute per milligram of protein
PhenacetinO-Deethylase Activity	5800 pmol/min/mg of protein. Phenacetin O-deethylase reactions were performed for 10 minutes at 37°C. Reactions contained 0.1 M potassium phosphate (pH 7.4), 10 pmol CYP1A2, 1.3 mM NADP+, 3.33 mM glucose-6-phosphate, 0.4 U/mL glucose-6-phosphate dehydrogenase, 3.33 mM magnesium chloride and 0.2 mM phenacetin. The reactions were stopped by the addition of 0.2 volumes of acetonitrile and were centrifuged (10,000 × g) for ten minutes. 40 µ of supernatant was injected onto a 4.5 mm × 70 mm 3 µm C18 HPLC column.
HPLC conditions	Solvent A: 10% methanol, Solvent B: 25% methanol. Initial conditions: 100% solvent A, after one minute start gradient to 100% solvent B over 6 minutes. The flow rate was 1.0 mL/min. The product was detected by its absorbance at 244 nm. The amount of acetamidophenol produced was calculated by comparison to a standard curve of authentic acetamidophenol
Storage	Store at –80°C in aliquots. AVOID FREEZE-THAW CYCLES.
Safety Precautions	Normal precautions exercised in handling laboratory reagents should be followed.
Note	The information on this certificate of analysis is lot-specific.
OfficialSymbol	CYP1A2

GENE INFORMATION

Gene Name	CYP1A2 cytochrome P450, family 1, subfamily A, polypeptide 2 [Homo sapiens

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	(human)]
Synonyms	CYP1A2; CP12; P3-450; P450(PA); cytochrome P450, family 1, subfamily A, polypeptide 2; cytochrome P450 1A2; CYPIA2; P450 form 4; cytochrome P450 4; cytochrome P(3)450; cytochrome P450-P3; dioxin-inducible P3-450; microsomal monooxygenase; xenobiotic monooxygenase; aryl hydrocarbon hydroxylase; flavoprotein-linked monooxygenase; cytochrome P450, subfamily I (aromatic compound-inducible), polypeptide 2; EC 1.14.14.1
Gene ID	1544
mRNA Refseq	NM_000761
Protein Refseq	NP_000752
MIM	124060
UniProt ID	P05177
Chromosome Location	15q24.1
Pathway	Aflatoxin B1 metabolism; Arachidonic acid metabolism; Caffeine metabolism
Function	caffeine oxidase activity; monooxygenase activity; oxidoreductase activity, acting on paired donors, with incorporation or reduction of molecular oxygen, reduced flavin or flavoprotein as one donor, and incorporation of one atom of oxygen

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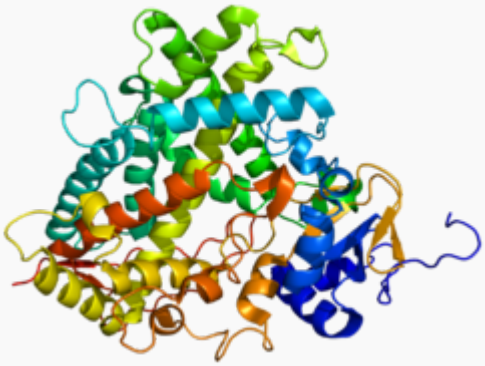
PDB rendering basedon 2hi4.	

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