Recombinant Human CYP2D6

Cat. No. CYP2D6-250H **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant Human CYP2D6 was expressed in Baculovirus-Insect cells.
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. This protein localizes to the endoplasmic reticulum and is known to metabolize as many as 20% of commonly prescribed drugs. Its substrates include debrisoquine, an adrenergic-blocking drug; sparteine and propafenone, both anti-arrythmic drugs; and amitryptiline, an anti-depressant. The gene is highly polymorphic in the population; certain alleles result in the poor metabolizer phenotype, characterized by a decreased ability to metabolize the enzyme"s substrates. The gene is located near two cytochrome P450 pseudogenes on chromosome 22q13.1. Alternatively spliced transcript variants encoding different isoforms have been found for this gene.
Volume	500 µ
Proteinconcentration	8.5 mg/mL as determined using the BCA assay. Buffer: 100 mM potassium phosphate (pH 7.4), 20% glycerol, 1 mM DTT, 0.1 mM EDTA
Concentration of cytochromeP450	1.0 nmol/mL

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Email: info@creative-biomart.com Fax: 1-631-938-8127
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SpecificContent of cytochrome P450	118 pmol spectral P450 per milligram of protein
Cytochrome P450 ReductaseActivity	0.31 μmol of cytochrome c reduced per minute per milligram of protein
Bufuralol hydroxylaseactivity	2.5 nmol/min/mg of protein. Bufuralol hydroxylation reactions were performed for 5 minutes at 37°C in 0.1 M potassium phosphate in the presence of 0.2 mM (+) bufuralol and 2 mM NADPH. The reaction was stopped by the addition of 0.2 volumes of 94% acetonitrile and 6% acetic acid. The mixture was spun in an Eppendorf centrifuge for ten minutes at maximum revolutions and 100 µ was removed for HPLC analysis.
HPLC conditions	20 µ of sample was injected on to a 4.5 mm x 70 mm 3 µm C18 HPLC column. Solvent A: 30% acetonitrile, 70% water, 1 mM perchloric acid, Solvent B: 100% methanol. Initial conditions were 30% B for 1 minute followed by a gradient to 100% B over 6 minutes, then equilibration with 30% B for another 2 minutes. The amount of hydroxybufuralol was calculated by comparison to a standard curve of authentic (+) hydroxybufuralol.
Notes	A 5% decrease in bufuralol hydroxylation was observed after the microsomes had undergone 5 freeze-thaw cycles.
Storage	−80°C; Avoid multiple freeze-thaws
Safety Precautions	Normal precautions exercised in handling laboratory reagents should be followed. The reagents supplied are not considered hazardous according to 29 CFR 1910.1200. The chemical, physical, and toxicological properties of these products may not, as yet, have been thoroughly investigated. We recommend the use of gloves, lab coats, and eye protection when working with any chemical reagents.

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OfficialSymbol	CYP2D6

GENE INFORMATION

Gene Name	CYP2D6 cytochrome P450, family 2, subfamily D, polypeptide 6 [Homo sapiens]
Synonyms	CYP2D6; cytochrome P450, family 2, subfamily D, polypeptide 6; CPD6; CYP2D; CYP2DL1; CYPIID6; P450C2D; P450DB1; CYP2D7AP; CYP2D7BP; CYP2D7P2; CYP2D8P2; P450-DB1; cytochrome P450 2D6; cytochrome P450; subfamily IID (debrisoquine, sparteine, etc., -metabolizing); polypeptide 6; cytochrome P450; subfamily IID (debrisoquine, sparteine, etc., -metabolizing)-like 1; debrisoquine 4-hydroxylase; flavoprotein-linked monooxygenase; microsomal monooxygenase; xenobiotic monooxygenase
Gene ID	1565
mRNA Refseq	NM_000106
Protein Refseq	NP_000097
MIM	124030
UniProt ID	P10635
Chromosome Location	22q13.1
Pathway	Biosynthesis of alkaloids derived from shikimate pathway; Drug metabolism - cytochrome P450; Biological oxidations
Function	aromatase activity; electron carrier activity; heme binding; metal ion binding

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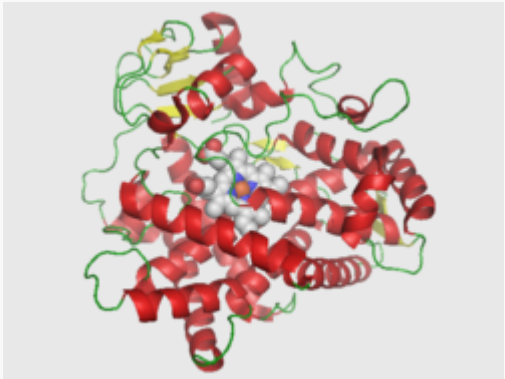
PDB rendering basedon 2f9q.	

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