

Recombinant Human CYP3A4

Cat. No. CYP3A4-540H **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant Human CYP3A4 was expressed in <i>Insect cells</i> .
Species	Human
Source	Insect Cells
Description	Cytochrome P450 3A4 (abbreviated CYP3A4) (EC 1.14.13.97), a member of the cytochrome P450 mixed-function oxidase system, is one of the most important enzymes involved in the metabolism of xenobiotics in the body. CYP3A4 is involved in the oxidation of the largest range of substrates of all the CYPs. As a result, CYP3A4 is present in the largest quantity of all the CYPs in the liver. In humans, the CYP3A4 protein is encoded by the CYP3A4 gene. This gene is part of a cluster of cytochrome P450 genes on chromosome 7q21.1.
Protein Concentration	10.2 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.
Hydroxylase Activity	7.175 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 µL was removed for HPLC analysis. HPLC conditions: 20 µL 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

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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.

Specific Content 116 pmol spectral P450 per milligram of protein.

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.

Storage -80°C; Avoid multiple freeze-thaws.

GENE INFORMATION

Gene Name CYP3A4 cytochrome P450, family 3, subfamily A, polypeptide 4 [Homo sapiens]

Synonyms CYP3A4; cytochrome P450, family 3, subfamily A, polypeptide 4; CYP11A3; CYP11A4; P450-III, steroid inducible; albendazole monooxygenase; albendazole sulfoxidase; cytochrome P450 3A3; cytochrome P450 3A4; cytochrome P450 HLP; cytochrome P450 NF-25; cytochrome P450, subfamily IIIA (nifedipine oxidase), polypeptide 3; cytochrome P450, subfamily IIIA (nifedipine oxidase), polypeptide 4; cytochrome P450-PCN1; glucocorticoid-inducible P450; nifedipine oxidase; quinine 3-monooxygenase; taurochenodeoxycholate 6- α -hydroxylase; CP33, CP34, CYP3A, CYP3A3, HLP, MGC126680, NF-25, P450C3, P450PCN1

Gene ID 1576

mRNA Refseq NM_017460

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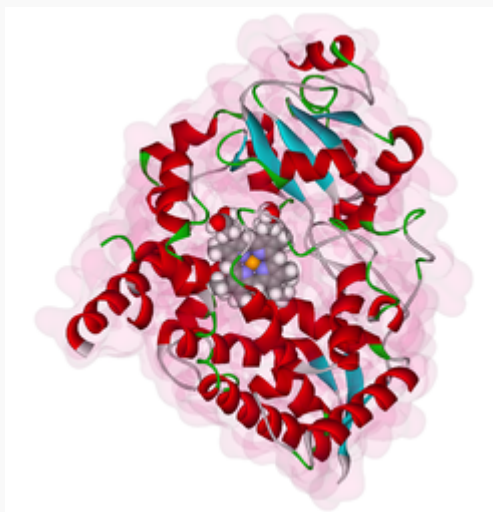
Protein Refseq	NP_059488
MIM	124010
UniProt ID	P08684
Chromosome Location	7q21.1
Pathway	Drug metabolism - cytochrome P450; Drug metabolism - other enzymes; Metabolic pathways; Metabolism of xenobiotics by cytochrome P450; Steroid hormone biosynthesis; Steroid hormone biosynthesis
Function	albendazole monooxygenase activity; caffeine oxidase activity; enzyme binding; iron ion binding; 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; steroid hydroxylase activity; taurochenodeoxycholate 6alpha-hydroxylase activity; vitamin D 24-hydroxylase activity; vitamin D3 25-hydroxylase activity

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Structure of CYP3A4.



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