

Recombinant Human CYP2C19

Cat. No. CYP2C19-536H **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant Human CYP2C19 allele expressed in <i>insect cells</i> were infected with a baculovirus containing the cDNA for human CYP2C19 and rabbit cytochrome P450 reductase.
Species	Human
Source	Insect Cells
Description	<p>This gene encodes a member of the cytochrome P450 superfamily of enzymes. The cytochrome P450 proteins are monooxygenases that catalyze many reactions involved in drug metabolism and synthesis of cholesterol, steroids and other lipids.</p> <p>This protein localizes to the endoplasmic reticulum and is known to metabolize many xenobiotics, including the anticonvulsive drug mephenytoin, omeprazole, diazepam and some barbiturates. Polymorphism within this gene is associated with variable ability to metabolize mephenytoin, known as the poor metabolizer and extensive metabolizer phenotypes.</p>
Protein Concentration	9.10 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.
Specific Content	121 pmol spectral P450 per milligram of protein.
Reductase Activity:	1.61 μ mol of cytochrome c reduced per minute per milligram of protein.
Hydroxylase Activity	838 pmol/min/mg of protein. Mephenytoin hydroxylation reactions were performed for

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15 minutes at 37°C in 0.1 M potassium phosphate in the presence of 0.3 mM S-(+)-mephenytoin and 2 mM NADPH. The reaction was stopped by the addition of 0.5 volumes of methanol containing 0.2 mM phenobarbital (internal standard). The mixture was extracted with methylene chloride. An aliquot of the organic phase was transferred to a fresh tube, and dried down at 60°C. Analytes were dissolved by addition of 100 µL of methanol. HPLC conditions: 10 µL of sample was injected on a 4.5 mm x 70 mm 3 µm C18 HPLC column. The mobile phase was 18% acetonitrile for 12 minutes with a 97.5% methanol wash for 3 minutes, followed by an equilibration step of 18% acetonitrile for 3 minutes. Flow rate was 1.2 mL per minute with detection at 204 nm. The amount of 4-hydroxymephenytoin was calculated by comparison to a standard curve of authentic 4-hydroxymephenytoin.

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

Safety Precautions Normal precautions exercised in handling laboratory reagents should be followed. 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.


GENE INFORMATION

Gene Name CYP2C19 cytochrome P450, family 2, subfamily C, polypeptide 19 [Homo sapiens]

Synonyms CYP2C19; cytochrome P450, family 2, subfamily C, polypeptide 19; CPCJ; CYP2C; P450C2C; P450IIC19; microsomal monooxygenase; xenobiotic monooxygenase; S-mephenytoin 4-hydroxylase; (R)-limonene 6-monooxygenase; (S)-limonene 6-monooxygenase; (S)-limonene 7-monooxygenase; flavoprotein-linked; monooxygenase; cytochrome P450, subfamily IIC (mephenytoin 4-hydroxylase), polypeptide 19; EC 1.14.13.48; EC 1.14.13.49; EC=1.14.13.80; Cytochrome P450-254C; Cytochrome P450-11A; CYP1IC17

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Gene ID	1557
mRNA Refseq	NM_000769
Protein Refseq	NP_000760
MIM	124020
UniProt ID	P33261
Chromosome Location	10q24.1-q24.3
Pathway	Arachidonic acid metabolism; Drug metabolism - cytochrome P450; Linoleic acid metabolism; Metabolic pathways; Metabolism of xenobiotics by cytochrome P450; Retinol metabolism; Biological oxidations
Function	(S)-limonene 6-monooxygenase activity; (S)-limonene 7-monooxygenase activity; 4-hydroxyacetophenone monooxygenase activity; electron carrier activity; oxidoreductase activity; doreductase activity; oxygen binding; metal ion binding
PDB rendering based on 1r9o.	

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