3050 Spruce Street
Saint Louis, Missouri 63103 USA
Telephone (800) 325-5832 (314) 771-5765
Fax (314) 286-7828
email: techserv@sial.com
sigma-aldrich.com

ProductInformation

CYTOCHROME P450 2C19 ISOZYME
Human, Recombinant
Microsomes with Cytochrome P450 Reductase

Product Number **C 4857**
Storage Temperature -70 °C

Product Description

The microsomal product is prepared from insect cells (*Sf* 9) infected with recombinant baculovirus containing cDNA inserts for the human cytochrome P450 isozyme and rabbit cytochrome P450 reductase. Metabolism by endogenous insect cytochromes P450 has not been detected.

Cytochrome P450 enzymes are a superfamily of heme containing monooxygenases, which are found primarily in the mammalian liver and catalyze the oxidative metabolism of xenobiotics. This metabolism is the initial step in the biotransformation and elimination of a wide variety of drugs and environmental pollutants from the body. These reactions are achieved through a mixed monooxygenase system with the general EC number of 1.14.14.1.[1]

CYP2C19 is an important human hepatic cytochrome P450, which is selective for 4'-hydroxylation of S-mephenytoin and omperazole.[2] A semi-quantitative RT-PCR method has been reported for the quantification of full-length CYP2C19 RNA in livers.[3] Ticlopidine is a selective inhibitor of CYP2C19 within the CYP2C subfamily.[4].

The product is supplied as 0.5 nmole of cytochrome P450 isozyme in a solution of 100 mM potassium phosphate, pH 7.4, with 1.0 mM EDTA, 1.0 mM DTT, and 20% (v/v) gycerol. Cytochrome c reductase activity, turnover activity, and protein content of the microsomes are reported on a lot-to-lot basis.

Cytochrome P450 Content: ≥80 pmole cytochrome P450 (spectral analysis) per milligram protein.

Precautions and Disclaimer

In general, ≤1% of the total reaction volume may be organic solvent. Any solvent at a concentration between 1 and 5% will have a serious effect on P450 activity. If it is necessary to use concentrations >1%, acetonitrile should be used since it has less of an effect on substrate metabolism. DMSO should never be used, since a concentration as low as 0.2% may inhibit certain types of cytochrome P450 activity.

This product is for laboratory research use only. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

1. Quickly thaw at 37 °C using a water bath. Keep on ice until ready to use.
2. If not using entire contents, aliquot to minimize freeze-thaw cycles.
3. Store aliquots at –70 °C.

Storage/Stability

The product is shipped on dry ice and should be stored at –70 °C. The product as supplied is stable for at least 18 months. For prolonged storage, freeze in working aliquots at –70 °C. Avoid repeated freezing and thawing.

References

1. Enzyme Nomenclature, IUBMB, Academic Press (1992).
2. Ibeanu, G. C., et al., J. Biol. Chem., **271**, 12496-12501 (1996).
3. Wang, X. Y., et al., Biotechniques., **29**, 364-370 and 372-373 (2000).
4. Ha-Duong, N. T., et al., Biochem., **40**, 12112-12122 (2001).

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