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Product Information

Cytochrome P450 2C8 Isozyme, human recombinant, expressed in *S. cervisiae* microsomal preparation containing human NADPH Reductase and cytochrome b_5

Catalog Number **C6999**
Storage Temperature –70 °C

Synonym: CYP2C8

Product Description

This microsomal product is prepared from *Saccharomyces cervisiae* expressing the human cytochrome P450 2C8 isozyme, and human NADPH reductase and cytochrome b_5.

The microsomal cytochrome P450 enzymes, found primarily in the endoplasmic reticulum of liver tissue, 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 mono-oxygenase system with the general EC number of 1.14.14.1.[1] The cytochrome P450 enzymes range in molecular mass between 45–60 kDa.

A number of drug metabolism studies have shifted from *in vivo* animal model systems to *in vitro* studies with human microsomal enzymes. Microsomal preparations from liver slices or hepatocytes have the disadvantages of multiple cytochrome P450 isozyme activities, transporters, and other cellular components, which cause varying and interfering activities when testing new chemical compounds.

Recombinant microsomal preparations have the advantage of a single cytochrome P450 isozyme activity. Use of a eukaryotic, yeast host allows efficient expression of the active isozyme with post-translational modification. The eukaryotic system provides an isozyme system with the following advantages:

- Recombinant isozyme mimics the active, native human enzyme
- Higher specific activity and better signal-to-noise ratio
- Consistent and reproducible results

The cytochrome P450 isozyme is supplied in a solution containing 50 mM potassium phosphate, pH 7.4, 5% glycerol, 1 mM EDTA, 1 mM PMSF, and 2 mM DTT.

Specific Activity: 0.053–0.071 unit/pmole enzyme

Unit Definition: One unit will oxidize 1.0 picomole of Dibenzylfluorescein per minute at pH 7.4 at 37 °C.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

1. Thaw product in an ice bath. Keep on ice until ready to use.
2. If not using entire contents, aliquot to minimize freeze-thaw cycles. Generally, 80% or more of the catalytic activity is retained after 6 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 remains active for at least 12 months.

References

1. Enzyme Nomenclature, IUBMB, Academic Press (1992).
2. Anzenbacher, P., and Anzenbacherova, E., Cytochromes P450 and metabolism of xenobiotics. Cell Mol. Life Sci., **58**, 737-47 (2001).
3. Guengrich, F.P., Cytochrome P450: Structure, Mechanism and Biochemistry (2nd Edition), Chapter 14. Ortiz de Montellano, P.R. (ed.) Plenum Press, (New York, NY: 1995).

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