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Product Information

S9 from Liver, Pooled from human

Product Number **S 2442**
Storage Temperature -70°C

Product Description

This product is a buffered solution containing the S9 fraction from a pool of freshly frozen human livers. The pathogenicity testing of all liver specimens has been performed using a PCR protocol. The donors were of mixed age and gender. The donors were in various states of health; however, each liver tested negative for HIV1&2, HTLV1&2, and hepatitis B and C.

The cytochrome P450 (CYP) proteins are heme-containing enzymes that constitute the major enzymatic system for metabolism of xenobiotics. Thus, cytochromes P450 are involved in the biosynthesis and metabolism of steroids, bile acids, fatty acids, prostaglandins, leukotrienes, biogenic amines, and retinoids. It has also been reported that CYP2B and CYP2C subfamilies can be induced by phenobarbital, but the level of CYP3A can only be elevated in man by dexamethasone and rifampicin.

The product is supplied in a solution containing 50 mM Tris-HCl, pH 7.5, with 2.0 mM EDTA and 150 mM KCl. The protein content is a minimum of 20 mg/ml and is reported on a lot-to-lot basis. Each vial contains 1.0 ml of the preparation.

Precautions and Disclaimer

This product is for laboratory research use only. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices. Handle as if capable of transmitting infectious agents.

Storage/Stability

The product is shipped on dry ice and it is recommended to store the product at -70°C . If not using the entire contents, aliquot to minimize freeze-thaw cycles.

Product Profile

CYP2C8 Isozyme Activity:

Determined as paclitaxel 6 α -hydroxylase activity. Incubations were conducted at 1.6 mg/ml of S9 protein in 50 mM potassium phosphate, pH 7.4, 3.3 mM MgCl_2 for 10 minutes at 37°C with an NADPH generating system (1.3 mM NADP, 3.3 mM glucose 6-phosphate, and 0.4 U/ml of glucose 6-phosphate dehydrogenase). One unit will produce 1 picomole of 6 α -hydroxypaclitaxel per minute at pH 7.4 at 37°C .

CYP2C9 Isozyme Activity:

Determined as diclofenac 4'-hydroxylase activity. Incubations were conducted at 1.6 mg/ml of S9 protein in 100 mM Tris, pH 7.5, 3.3 mM MgCl_2 for 10 minutes at 37°C with an NADPH generating system (1.3 mM NADP, 3.3 mM glucose 6-phosphate, and 0.4 U/ml of glucose 6-phosphate dehydrogenase). One unit will produce 1 picomole of 4'-hydroxydiclofenac per minute at pH 7.5 at 37°C .

CYP3A4 Isozyme Activity:

Determined as testosterone 6 β -hydroxylase activity. Incubations were conducted at 1 mg/ml of S9 protein in 100 mM potassium phosphate, pH 7.4, 3.3 mM MgCl_2 for 10 minutes at 37°C with an NADPH generating system (1.3 mM NADP, 3.3 mM glucose 6-phosphate, and 0.4 U/ml of glucose 6-phosphate dehydrogenase). One unit will produce 1 picomole of 6 β -hydroxytestosterone per minute at pH 7.4 at 37°C .

CYP2B6 Isozyme Activity:

Determined as (S)-mephenytoin N-demethylase activity. Incubations were conducted at 1.6 mg/ml of S9 protein in 50 mM potassium phosphate, pH 7.4, 3.3 mM MgCl_2 for 20 minutes at 37°C with an NADPH generating system (1.3 mM NADP, 3.3 mM glucose 6-phosphate, and 0.4 U/ml of glucose 6-phosphate dehydrogenase). One unit will produce 1 picomole of nervanol per minute at pH 7.4 at 37°C .

CYP2C19 Isozyme Activity:

Determined as (S)-mephenytoin 4'-hydroxylase activity. Incubations were conducted at 1.6 mg/ml of S9 protein in 50 mM potassium phosphate, pH 7.4, 3.3 mM MgCl₂ for 20 minutes at 37 °C with an NADPH generating system (1.3 mM NADP, 3.3 mM glucose 6-phosphate, and 0.4 U/ml of glucose 6-phosphate dehydrogenase). One unit will produce 1 picomole of 4'-hydroxymephenytoin per minute at pH 7.4 at 37 °C.

CYP2A6 Isozyme Activity:

Determined as coumarin 7-hydroxylase activity. Incubations were conducted at 1.6 mg/ml of S9 protein in 100 mM Tris, pH 7.5, 3.3 mM MgCl₂ for 20 minutes at 37 °C with an NADPH generating system (1.3 mM NADP, 3.3 mM glucose 6-phosphate, and 0.4 U/ml of glucose 6-phosphate dehydrogenase). One unit will produce 1 picomole of 7-hydroxycoumarin per minute at pH 7.5 at 37 °C.

CYP1A2 Isozyme Activity:

Determined as phenacetin O-deethylase activity. Incubations were conducted at 1.6 mg/ml of S9 protein in 100 mM potassium phosphate, pH 7.4, 3.3 mM MgCl₂ for 20 minutes at 37 °C with an NADPH generating system (1.3 mM NADP, 3.3 mM glucose 6-phosphate, and 0.4 U/ml of glucose 6-phosphate dehydrogenase). One unit will produce 1 picomole of acetamidophenol per minute at pH 7.4 at 37 °C.

CYP2D6 Isozyme Activity:

Determined as bufuralol 1'-hydroxylase activity. Incubations were conducted at 1.6 mg/ml of S9 protein in 100 mM potassium phosphate, pH 7.4, 3.3 mM MgCl₂ for 20 minutes at 37 °C with an NADPH generating system (1.3 mM NADP, 3.3 mM glucose 6-phosphate, and 0.4 U/ml of glucose 6-phosphate dehydrogenase). One unit will produce 1 picomole of 1'-hydroxybufuralol per minute at pH 7.4 at 37 °C.

CYP2E1 Isozyme Activity:

Determined as chlorzoxazone 6'-hydroxylase activity. Incubations were conducted at 1.6 mg/ml of S9 protein in 100 mM potassium phosphate, pH 7.4, 3.3 mM MgCl₂ for 20 minutes at 37 °C with an NADPH generating system (1.3 mM NADP, 3.3 mM glucose 6-phosphate, and 0.4 U/ml of glucose 6-phosphate dehydrogenase). One unit will produce 1 picomole of 6'-hydroxychlorzoxazone per minute at pH 7.4 at 37 °C.

References

1. Handschin, C., et al., Cholesterol and Bile Acids Regulate Xenosensor Signaling in Drug-mediated Induction of Cytochromes P450. J. Biol. Chem., **277**, 29561-29567 (2002).

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