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Product Information

Microsomes from Liver, Pooled from mouse (CD-1), male

Catalog Number **M9441**
Storage Temperature –70 °C

Product Description

Liver microsomes are subcellular particles derived from the endoplasmic reticulum of hepatic cells. These microsomes are a rich source of drug metabolizing enzymes, including cytochromes P450. Microsome pools from various sources are useful in the study of xenobiotic metabolism and drug interactions.

The protein content is ≥20 mg/ml in 250 mM sucrose and is reported on the certificate of analysis (CofA). Total cytochrome P450, oxidoreductase, CYP1A and CYP3A activities, and cytochrome b_5 are also reported on the lot specific CofA.

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

Storage/Stability

The product is shipped on dry ice and it is recommended to store the product at –70 °C. The product, as supplied, remains active for at least 2 years if stored properly.

Product Profile

Total cytochrome P450 and cytochrome b_5 are assayed by the standard method of Omura and Sato.[1]

Enzyme activities for the product are determined as follows:

Oxidoreductase Activity:
Determined as cytochrome c reductase activity. The reaction is initiated by the addition of 0.1 mg/ml protein to 1.0 ml of reaction mixture containing 1.3 mM NADP, 3.3 mM glucose 6-phosphate, 0.4 unit/ml glucose 6-phosphate dehydrogenase, 3.3 mM $MgCl_2$, and 0.95 mg/ml cytochrome c in 0.25 M potassium phosphate buffer, pH 7.4, at 37 °C. The absorbance change at 550 nm is recorded as a function of time. An extinction coefficient for reduced (ferrous) cytochrome c at 550 nm of 19.6 mM^{-1} cm^{-1} is used to calculate the reductase activity. One unit will reduce 1 nanomole of cytochrome c per minute at pH 7.4 at 37 °C.

CYP1A Isozyme Activity:
Determined as 7-ethoxyresorufin O-deethylase activity. Incubations are conducted at 0.5 mg/ml protein with 1.3 mM NADP, 3.3 mM glucose 6-phosphate, 0.4 unit/ml glucose 6-phosphate dehydrogenase, and 3.3 mM $MgCl_2$ in 0.1 M potassium phosphate buffer, pH 7.4, for 2 minutes. One unit will produce 1 picomole of resorufin per minute at pH 7.4 at 37 °C.

CYP3A Isozyme Activity,
Determined as testosterone 6β-hydroxylase activity. Incubations are conducted at 0.2 mg/ml protein with 1.3 mM NADP, 3.3 mM glucose 6-phosphate, 0.4 unit/ml glucose 6-phosphate dehydrogenase, and 3.3 mM $MgCl_2$ in 0.1 M potassium phosphate buffer, pH 7.4, for 20 minutes. One unit will produce 1 picomole of 6β-hydroxytestosterone per minute at pH 7.4 at 37 °C.

References

1. Omura, T., and Sato, R., J. Biol. Chem., **239**, 2379, (1964).

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