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Product Information

Monoamine Oxidase B

human, recombinant

microsomes from baculovirus infected insect cells

Product Number **M 7441**

Storage Temperature -70 °C

Synonym: MAO-B

Product Description

The microsomal product is prepared from insect cells (BTI-TN-5B1-4) infected with recombinant baculovirus containing cDNA inserts for human MAO-B.

Monoamine Oxidase (MAO) is an integral flavoprotein of the outer mitochondrial membrane. MAOs are responsible for catalyzing the oxidative deamination of a wide variety of xenobiotic and endobiotic primary, secondary, and tertiary amines. The primary endogenous function of MAOs involves the inactivation of monoamine neurotransmitters, such as serotonin and dopamine. MAOs exist in two isoforms, MAO-A and MAO-B, which share approximately 70% sequence identity on the amino acid level.¹ Both isoforms are nearly ubiquitous in mammals, but show particularly high enzymatic activity in the central nervous system and liver.

Monoamine Oxidase B is found in high levels in the liver, brain, and platelets, but is only weakly expressed in the placenta. Benzylamide and phenylethylamide are preferentially catalyzed by MAO-B, which shows a higher efficiency with tertiary amines than its closely related isoform, and shows preference for highly lipophilic substrates.¹ MPTP is an important tertiary amine metabolized by MAO-B exclusively in neurons. The product of this metabolism, MPP⁺ is a known Parkinson inducing dopaminergic neurotoxin.⁴

This product is supplied as a 0.5 ml solution of 100 mM potassium phosphate, pH 7.4, 0.25 M sucrose, 0.1 mM EDTA, and 5% glycerol. Protein concentration and content, and kynuramine deamination activity of the microsomes are reported on a lot-to-lot basis.

Precautions and Disclaimer

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

Preparation Instructions

It is recommended that the product be thawed rapidly in a 37 °C water bath and kept on ice until use.

Storage/Stability

The product ships on dry ice and it is recommended to store the product at -70 °C. Avoid repeated freeze-thaw cycles.

References

1. Toxicology, Oesch, F., and Arand, M., Academic Press (San Diego, CA: 1999), pg. 93.
2. Kalgutkar, A.S., et al., Interactions of nitrogen-containing xenobiotics with monoamine oxidase (MAO) isozymes A and B: SAR studies on MAO substrates and inhibitors. *Chemical Research in Toxicology*, **14**, 1139-1162, (2001).
3. Benedetti, M.S., Biotransformation of xenobiotics by amine oxidases. *Fundamentals of Clinical Pharmacology*, **15**, 75-84 (2001).
4. Youdim, M.B.H, and Finberg, J.P.M., New directions in monoamine oxidase A and B selective inhibitors and substrates. *Biochemical Pharmacology*, **41**, 155-162 (1991).

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