

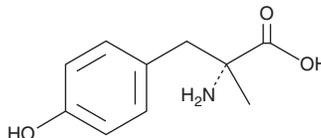
PRODUCT INFORMATION



Metyrosine

Item No. 24001

CAS Registry No.: 672-87-7
Formal Name: α -methyl-L-tyrosine
Synonyms: α -Methyl-L-p-tyrosine, MK-781, L- α -MT
MF: C₁₀H₁₃NO₃
FW: 195.2
Purity: $\geq 98\%$
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥ 4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Metyrosine is supplied as a crystalline solid. A stock solution may be made by dissolving the metyrosine in the solvent of choice, which should be purged with an inert gas. Metyrosine is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of metyrosine in these solvents is approximately 50 $\mu\text{g/ml}$.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of metyrosine in PBS, pH 7.2, is approximately 2 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Metyrosine is an inhibitor of tyrosine hydroxylase.¹ *In vivo*, metyrosine (200 mg/kg) reduces norepinephrine and dopamine levels in rat brain and disrupts conditioned avoidance behavior in a dose-dependent manner. Metyrosine reduces dopamine transporter knockdown-induced hyperactivity and rearing behavior and increases exploratory behavior in a hole board assay in a mouse model of bipolar disorder mania.² It reduces hypertension induced by dexamethasone (Item No. 11015) and cyclosporin in rats.^{3,4} Metyrosine also inhibits norepinephrine production and increases plasma levels of leptin in fasted and fed mice.⁵

References

1. Moore, K.E., Wright, P.F., and Bert, J.K. Toxicologic studies with α -methyltyrosine, an inhibitor of tyrosine hydroxylase. *J. Pharm. Exp. Ther.* **155(3)**, 506-515 (1967).
2. van Enkhuizen, J., Geyer, M.A., Halberstadt, A.L., et al. Dopamine depletion attenuates some behavioral abnormalities in a hyperdopaminergic mouse model of bipolar disorder. *J. Affect. Disord.* **155**, 247-254 (2014).
3. Soto-Pina, A.E., Franklin, C., Rani, C.S.S., et al. A novel model of dexamethasone-induced hypertension: Use in investigating the role of tyrosine hydroxylase. *J. Pharmacol. Exp. Ther.* **358(3)**, 528-536 (2016).
4. Shimizu, H., Kumai, T., and Kobayashi, S. Involvement of tyrosine hydroxylase upregulation in cyclosporine-induced hypertension. *Jpn. J. Pharmacol.* **85(3)**, 306-312 (2001).
5. Rayner, D.V., Simon, E., Duncan, J.S., et al. Hyperleptinaemia in mice induced by administration of the tyrosine hydroxylase inhibitor α -methyl-p-tyrosine. *FEBS Lett.* **429(3)**, 395-398 (1998).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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