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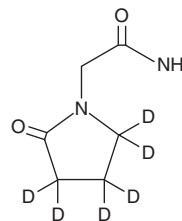
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PRODUCT INFORMATION



Piracetam-d₆ Item No. 34241

Formal Name: 2-(2-oxopyrrolidin-1-yl-3,3,4,4,5,5-d₆)acetamide
MF: C₆H₄D₆N₂O₂
FW: 148.2
Chemical Purity: ≥95% (Piracetam)
Deuterium Incorporation: ≥99% deuterated forms (d₁-d₆); ≤1% d₀
Supplied as: A solid
Storage: -20°C
Stability: ≥2 years



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

Laboratory Procedures

Piracetam-d₆ is intended for use as an internal standard for the quantification of piracetam by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated versus unlabeled).

Piracetam-d₆ is supplied as a solid. A stock solution may be made by dissolving the piracetam-d₆ in the solvent of choice, which should be purged with an inert gas. Piracetam-d₆ is soluble in organic solvents such as methanol and DMSO.

Description

Piracetam is a nootropic cyclic GABA derivative.¹ It is a positive allosteric modulator of AMPA receptors and enhances binding of the NMDA antagonist MK-801 to rat forebrain membranes.^{2,3} Piracetam (1 mM) protects against amyloid-β-induced decreases in the mitochondrial membrane potential, as well as decreases in neurite outgrowth in the presence of NGF, in PC12 rat adrenal medulla cells.⁴ It prevents scopolamine-induced amnesia in a passive avoidance test in mice when administered at a dose of 30 mg/kg.⁵ Formulations containing piracetam have been used in the treatment of myoclonus.

References

1. Winnicka, K., Tomasiak, M., and Bielawska, A. Piracetam - An old drug with novel properties? *Acta Pol. Pharm.* **62**(5), 405-409 (2005).
2. Copani, A., Genassani, A.A., Aleppo, G., et al. Nootropic drugs positively modulate α-amino-3-hydroxy-5-methyl-4-isoxazolepropionic acid-sensitive glutamate receptors in neuronal cultures. *J. Neurochem.* **58**(4), 1199-1204 (1992).
3. Hamelin, S.M. and Lehmann, J.C. Effects of putative cognition enhancers on the NMDA receptor by [³H]MK801 binding. *Eur. J. Pharmacol.* **281**(3), R11-R13 (1995).
4. Kurz, C., Ungerer, I., Lipka, U., et al. The metabolic enhancer piracetam ameliorates the impairment of mitochondrial function and neurite outgrowth induced by β-amyloid peptide. *Br. J. Pharmacol.* **160**(2), 246-257 (2010).
5. Ghelardini, C., Galeotti, N., Gualtieri, F., et al. The novel nootropic compound DM232 (unifiram) ameliorates memory impairment in mice and rats. *Drug Develop. Res.* **56**(1), 23-32 (2002).

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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