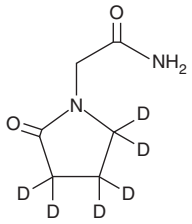
PRODUCT INFORMATION

Piracetam-d_6

Item No. 34241

CAS Registry No.:	2907016-93-5
Formal Name:	2-oxo-1-pyrrolidine-3,3,4,4,5,5-d_6-acetamide
MF:	$C_6H_4D_6N_2O_2$
FW:	148.2
Chemical Purity:	≥95% (Piracetam)
Deuterium Incorporation:	≥99% deuterated forms (d_1-d_6); ≤1% d_0
Supplied as:	A 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

Piracetam-d_6 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-d_6 is supplied as a solid. A stock solution may be made by dissolving the piracetam-d_6 in the solvent of choice, which should be purged with an inert gas. Piracetam-d_6 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

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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 [^{3}H]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).

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