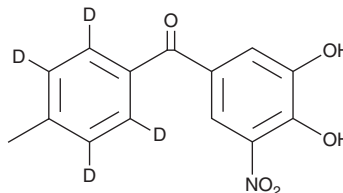


PRODUCT INFORMATION



Tolcapone-d₄ Item No. 28697

CAS Registry No.: 1246816-93-2
Formal Name: (3,4-dihydroxy-5-nitrophenyl)
(4-methylphenyl-2,3,5,6-d₄)methanone
MF: C₁₄H₇D₄NO₅
FW: 277.3
Chemical Purity: ≥95% (Tolcapone)
**Deuterium
Incorporation:** ≥99% deuterated forms (d₁-d₄); ≤1% d₀
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

Tolcapone-d₄ is intended for use as an internal standard for the quantification of tolcapone (Item No. 20768) 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).

Tolcapone-d₄ is supplied as a solid. A stock solution may be made by dissolving the tolcapone-d₄ in the solvent of choice, which should be purged with an inert gas. Tolcapone-d₄ is slightly soluble in methanol and DMSO.

Description

Tolcapone is a reversible inhibitor of catechol-O-methyltransferase (COMT; K_i = 0.27 nM for human recombinant COMT), an enzyme that degrades catecholamines, including dopamine (Item No. 21992) and L-DOPA (Item No. 13248).^{1,2} Tolcapone crosses the blood brain barrier and can inhibit both peripheral and central COMT activity.^{3,4} By inhibiting COMT, tolcapone increases L-DOPA efficacy and reduces L-DOPA-induced motor complications in animal models of Parkinson's disease.³

References

1. Lotta, T., Vidgren, J., Tilgmann, C., *et al.* Kinetics of human soluble and membrane-bound catechol O-methyltransferase: A revised mechanism and description of the thermolabile variant of the enzyme. *Biochemistry* **34**(13), 4202-4210 (1995).
2. Männistö, P.T. and Kaakkola, S. Catechol-O-methyltransferase (COMT): Biochemistry, molecular biology, pharmacology, and clinical efficacy of the new selective COMT inhibitors. *Pharmacol. Rev.* **51**(4), 593-628 (1999).
3. Espinoza, S., Managó, F., Leo, D., *et al.* Role of catechol-O-methyltransferase (COMT)-dependent processes in Parkinson's disease and L-DOPA treatment. *CNS Neurol. Disord. Drug Targets* **11**(3), 251-263 (2012).
4. Männistö, P.T., Tuominen, P., and Tuominen, R.K. Different *in vivo* properties of three new inhibitors of catechol O-methyltransferase in the rat. *Br. J. Pharmacol.* **105**(3), 569-574 (1992).

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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