

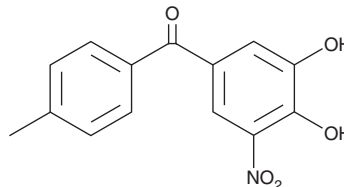
# PRODUCT INFORMATION



## Tolcapone

Item No. 20768

**CAS Registry No.:** 134308-13-7  
**Formal Name:** (3,4-dihydroxy-5-nitrophenyl)  
(4-methylphenyl)-methanone  
**Synonym:** Ro 40-7592  
**MF:** C<sub>14</sub>H<sub>11</sub>NO<sub>5</sub>  
**FW:** 273.2  
**Purity:** ≥98%  
**UV/Vis.:** λ<sub>max</sub>: 219, 265 nm  
**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

Tolcapone is supplied as a crystalline solid. A stock solution may be made by dissolving the tolcapone in the solvent of choice, which should be purged with an inert gas. Tolcapone is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of tolcapone in ethanol is approximately 20 mg/ml and approximately 30 mg/ml in DMSO and DMF.

Tolcapone is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, tolcapone should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Tolcapone has a solubility of approximately 0.14 mg/ml in a 1:6 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

### Description

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

### 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., Tuomainen, 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.

#### WARRANTY AND LIMITATION OF REMEDY

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#### CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA

**PHONE:** [800] 364-9897  
[734] 971-3335

**FAX:** [734] 971-3640

CUSTSERV@CAYMANCHEM.COM  
WWW.CAYMANCHEM.COM