



<b>Catalog Number:</b>	MC11026	<b>Product Type:</b>	Small Molecule
<b>Bio-Activity:</b>	COMT inhibitor; TTR aggregation inhibitor	<b>CAS #:</b>	134308-13-7
<b>Research Categories:</b>	Neuroscience	<b>Chemical Name:</b>	(3,4-Dihydroxy-5-nitrophenyl)(4-methylphenyl)methanone
<b>Solubility:</b>	Soluble in DMSO (up to 25 mg/ml) or in Ethanol (up to 25 mg/ml)	<b>Molecular Formula:</b>	C14H11NO5
<b>Purity:</b>	> 98%	<b>Molecular Weight:</b>	273.24
<b>Format:</b>	Powder	<b>Ship Temp:</b>	Ambient
<b>Storage:</b>	-20°C		

### Application Notes

#### Description/Data:

Tolcapone has demonstrated to be a Catechol O-methyltransferase inhibitor (COMT), limiting brain and peripheral enzymes (1). It is a potent inhibitor of alpha-synuclein and beta-amyloid oligomerization and fibrillogenesis protecting against extracellular toxicity (2). Tolcapone interacts with transthyretin (TTR) with high affinity (21 to 58 nM) and prevents TTR aggregation in human plasma and prevents TTR-induced cytotoxicity *in vitro*. It also steadies TTR in mice and humans *in vivo* (3). Tolcapone inhibits O-methylation of exogenous polyphenols such as EGCG (4).

#### References:

- 1) Manisto et al. (1992), Different *in vivo* properties of three new inhibitors of catechol O-methyltransferase in the rat; *Br. J. Pharmacol.*, 105 569
- 2) Giovanni et al. (2010), Entacapone and tolcapone, two catechol O-methyltransferase inhibitors, block fibril formation of alpha-synuclein and beta-amyloid and protect against amyloid-induced toxicity; *J. Biol. Chem.*, 285 14941
- 3) Sant'Anna et al. (2016), Repositioning tolcapone as a potent inhibitor of transthyretin amyloidogenesis and associated cellular toxicity; *Nat. Commun.*, 7 10787
- 4) Forester and Lambert (2015), The catechol-O-methyltransferase inhibitor, tolcapone, increases the bioavailability of unmethylated (-)-epigallocatechin-3-gallate in mice; *Funct. Foods*, 17 183

### FOR RESEARCH USE ONLY

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