NEUROMICS

Entacapone Data Sheet

Catalog Number:	MC11009	**Product Type:**	Small Molecule
Bio-Activity:	COMT inhibitor; Anti-Parkinsons	**CAS #:**	130929-57-6
Research Categories:	Neuroscience, cellular stress	**Chemical Name:**	(2E)-2-Cyano-3-(3,4-dihydroxy-5-nitrophenyl)-N,N-diethyl-2-propenamide
Solubility:	Soluble in DMSO (up to 30 mg/ml) or in Ethanol (up to 3 mg/ml).	**Molecular Formula:**	C14H15N3O5
Purity:	> 98%	**Molecular Weight:**	305.29
Format:	Powder	**Ship Temp:**	Ambient
Storage:	-20°C		

Application Notes

Description/Data:
Entacapone is a potent catechol O-methyltransferase (COMT) inhibitor (IC50 = 14.3, 20.1 and 73.3 nM for rat liver soluble COMT, total COMT and membrane-bound COMT respectively) (1). It also promotes production of L-DOPA, which could make it a useful for treating Parkinson's disease (2). It also inhibits α-synuclein aggregation *in vitro* and inhibits α-synuclein-induced cell death in PC-12 cells (3). Entacapone also play a role in oxidative stress-induced cell death (4).

References:

1) Forsberg et al. (2003), Pharmacokinetics and pharmacodynamics of entacapone and tolcapone after acute and repeated administration: a comparative study in the rat; *J. Pharmacol. Exp. Ther.*, 304 498

2) Merello et al. (1994), Effect of entacapone, a peripherally acting catechol-O-methyltransferase inhibitor, on the motor response to acute treatment with levodopa in patients with Parkinson's disease; *J. Neurol. Neurosurg. Psychiatry*, 57 186

3) 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

4) Chen et al. (2016), Entacapone is an Antioxident More Potent than Vitamin C and Vitamin E for Scavenging of Hypochlorous Acid and Peroxynitrite, and the Inhibition of Oxidative Stress-induced Cell Death; *Med. Sci. Monit.*, 22 687

FOR RESEARCH USE ONLY

Neuromics Antibodies • 5325 West 74th Street, Suite 8 • Edina, MN 55439
phone 866-350-1500 • fax 612-677-3976 • e-mail: pshuster@neuromics.com