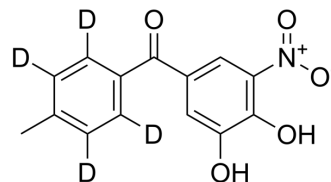


## Tolcapone-d<sub>4</sub>

<b>Cat. No.:</b>	HY-17406S1	
<b>CAS No.:</b>	1246816-93-2	
<b>Molecular Formula:</b>	C <sub>14</sub> H <sub>7</sub> D <sub>4</sub> NO <sub>5</sub>	
<b>Molecular Weight:</b>	277.27	
<b>Target:</b>	COMT; Amyloid-β; Apoptosis; Isotope-Labeled Compounds	
<b>Pathway:</b>	Metabolic Enzyme/Protease; Neuronal Signaling; Apoptosis; Others	
<b>Storage:</b>	Powder	-20°C 3 years 4°C 2 years
	In solvent	-80°C 6 months -20°C 1 month



### BIOLOGICAL ACTIVITY

<b>Description</b>	Tolcapone-d <sub>4</sub> is the deuterium labeled Tolcapone. Tolcapone (Ro 40-7592) is a selective, orally active and powerful mixed (peripheral and central) COMT inhibitor with an IC <sub>50</sub> of 773 nM in the liver[1]. Tolcapone is also a potent inhibitor of α-syn and Aβ <sub>42</sub> oligomerization and fibrillogenesis[2]. Tolcapone induces oxidative stress leading to apoptosis and inhibition of tumor growth in neuroblastoma[3].
<b>In Vitro</b>	Stable heavy isotopes of hydrogen, carbon, and other elements have been incorporated into drug molecules, largely as tracers for quantitation during the drug development process. Deuteration has gained attention because of its potential to affect the pharmacokinetic and metabolic profiles of drugs <sup>[1]</sup> . MCE has not independently confirmed the accuracy of these methods. They are for reference only.

### REFERENCES

- [1]. Russak EM, et al. Impact of Deuterium Substitution on the Pharmacokinetics of Pharmaceuticals. *Ann Pharmacother.* 2019;53(2):211-216.
- [2]. Catechol-O-methyltransferase: variation in enzyme activity and inhibition by entacapone and tolcapone. C De Santi, et al. *Eur J Clin Pharmacol.* 1998 May;54(3):215-9.
- [3]. Saviana Di Giovanni, et al. 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.* 2010 May 14;285(20):14941-14954.
- [4]. Tyler Maser, et al. Tolcapone induces oxidative stress leading to apoptosis and inhibition of tumor growth in Neuroblastoma. *Cancer Med.* 2017 Jun;6(6):1341-1352.

**Caution: Product has not been fully validated for medical applications. For research use only.**

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