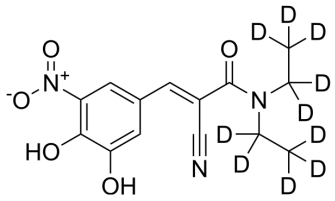
(E)-Entacapone-d_{10}

Cat. No.:	HY-14280S2
Molecular Formula:	$C_{14}H_5D_{10}N_3O_5$
Molecular Weight:	315.35
Target:	COMT
Pathway:	Metabolic Enzyme/Protease; Neuronal Signaling
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	(E)-Entacapone-d_{10} is the deuterium labeled Entacapone. Entacapone is a potent, reversible, peripherally acting and orally active catechol-O-methyltransferase (COMT) inhibitor. Entacapone inhibits COMT from rat brain, erythrocytes and liver with IC50 values of 10 nM, 20 nM, and 160 nM, respectively. Entacapone is selective for COMT over other catecholamine metabolizing enzymes, including MAO-A, MAO-B, phenolsulphotransferase M (PST-M) and PST-P (IC50s>50 μM). Entacapone can be used for the research of Parkinson's disease[1]. Entacapone serves as a inhibitor of FTO demethylation with an IC50 of 3.5 μM, can be used for the research of metabolic disorders[2].
In Vitro	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[1]. 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]. E Nissinen, et al. Biochemical and pharmacological properties of a peripherally acting catechol-O-methyltransferase inhibitor entacapone. Naunyn Schmiedebergs Arch Pharmacol. 1992 Sep;346(3):262-6.

[3]. Shiming Peng, et al. Identification of entacapone as a chemical inhibitor of FTO mediating metabolic regulation through FOXO1. Sci Transl Med

[4]. https://pubmed.ncbi.nlm.nih.gov/26524693/

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