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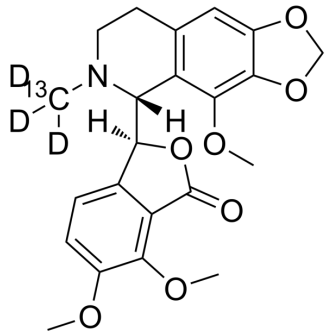
Noscapine-$^{13}C,d_3$

Cat. No.:	HY-13716S
CAS No.:	1217680-57-3
Molecular Formula:	$C_{21}{}^{13}CH_{20}D_3NO_7$
Molecular Weight:	417.43
Target:	Apoptosis; Opioid Receptor; Isotope-Labeled Compounds
Pathway:	Apoptosis; GPCR/G Protein; Neuronal Signaling; Others
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Noscapine-13C,d3 is a deuterated labeled Noscapine[1]. Noscapine ((S,R)-Noscapine) is an orally active phthalideisoquinoline alkaloid with potent antitussive. Noscapine exerts its antitussive effects by activating sigma opioid receptors and is a non-competitive Bradykinin inhibitor. Noscapine disrupts microtubule dynamics, induces mitotic arrest and apoptosis. Noscapine possesses anticancer, neuroprotective, anti-inflammatory activities, and can cross the blood-brain barrier[2][3][4][5][6].
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]. Noscapine (0-1000 μM; 0-96 hours; rat C6 glioma cells) treatment inhibits cell viability of rat C6 glioma in vitro in a dose- and time-dependent manner. Noscapine inhibits the viability of rat C6 glioma cells with an IC_{50} of 250 μM at 72 hours[2]. Noscapine exposure causes abnormal S-phase reentry, increases mitotic arrest and results in excessive DNA accumulation[2]. Cylindromatosis increases the ability of noscapine to induce mitotic arrest and apoptosis. Cylindromatosis enhances the effect of noscapine on microtubule polymerization and promotes noscapine binding to microtubules[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Noscapine (300?mg/kg; oral gavage; daily; for 15 days; athymic female mice) treatment reduces tumor growth in mice[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

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[2]. Yunfan Yang, et al. CYLD Regulates Noscapine Activity in Acute Lymphoblastic Leukemia via a Microtubule-Dependent Mechanism. Theranostics. 2015 Mar 2;5(7):656-66.

[3]. Vartika Tomar, et al. Noscapine and Its Analogs as Chemotherapeutic Agent: Current Updates. Curr Top Med Chem. 2017;17(2):174-188.

[4]. Bianca Lokhorst, et al. Interaction of OTC Drug Noscapine and Acenocoumarol and Phenprocoumon. Br J Clin Pharmacol. 2019 May;85(5):1041-1043.

[5]. S A Ebrahimi, et al. Interaction of Noscapine With the Bradykinin Mediation of the Cough Response. Acta Physiol Hung. 2003;90(2):147-55.

[6]. Russak EM, et al. Impact of Deuterium Substitution on the Pharmacokinetics of Pharmaceuticals. Ann Pharmacother. 2019 Feb;53(2):211-216.

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

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