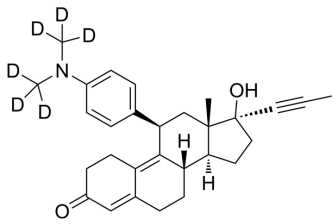
Mifepristone-d_6

Cat. No.:	HY-13683S2
CAS No.:	1228097-18-4
Molecular Formula:	$C_{29}H_{29}D_6NO_2$
Molecular Weight:	435.63
Target:	Glucocorticoid Receptor; Autophagy; Endogenous Metabolite; NO Synthase; Progesterone Receptor; Isotope-Labeled Compounds
Pathway:	Immunology/Inflammation; Vitamin D Related/Nuclear Receptor; Autophagy; Metabolic Enzyme/Protease; Others
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Mifepristone-d_6 is deuterated labeled Mifepristone (HY-13683). Mifepristone (RU486) is a progesterone receptor (PR) and glucocorticoid receptor (GR) antagonist with IC_{50}s of 0.2 nM and 2.6 nM in in vitro assay[1].
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]. The discovery of the first competitive progesterone antagonist, Mifepristone, has stimulated an intense search for more potent and more selective antiprogestins[2]. Cell growth is evaluated after 4 days of exposure to Mifepristone at 10 μM, a concentration close to the plasma concentration achievable in humans. The antiproliferative effect of NSC 119875 is potentiated when administered in combination with Mifepristone in HeLa cells. The IC_{50} of NSC 119875 in combination with Mifepristone is lower (14.2 μM) than that of NSC 119875 alone (34.2 μM) in HeLa cells with an approximately 2.5-fold difference. After treatment with Mifepristone, the accumulation of intracellular NSC 119875 in HeLa cells is 2-fold greater, representing a significant difference (p=0.009), compare with NSC 119875 alone from 0.79 to 1.52 μg/mg of protein[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	The cervix tumor xenograft models are treated with NSC 119875 alone, there is a tumor growth inhibition compare with control group. However, the tumor weight loss is even more significant (p<0.05) with the combination of NSC 119875 and Mifepristone at the doses used, showing a decrease of ~50% compared with the treatments alone by the end of the study[3]. Adult male Sprague-Dawley rats are subjected to a 4-day binge-like EtOH administration regimen (3 to 5 g/kg/i.g. every 8 hours designed to produce peak blood EtOH levels (BELs) of <300 mg/dL). Subgroups of animals receive s.c. injection of Mifepristone (20 or 40 mg/kg in peanut oil). Although Mifepristone produces no significant changes in behavior of EtOH-na?ve animals, pretreatment with Mifepristone (40 mg/kg) significantly reducesthe severity of EtOH withdrawal. Asignificant interaction between diet and drug, F(5,55)=3.92, p<0.05, such that EtOH-treated animals receiving vehicle or 20 mg/kg of Mifepristone displayssignificantly more signs of EtOH withdrawal than does EtOH-na?ve animals receiving the same drug treatment. Importantly, treatment with 40 mg/kg of Mifepristone significantly reduces the severity of EtOH withdrawal, in a dose-dependent manner[4]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Jurado R, et al. NSC 119875 cytotoxicity is increased by mifepristone in cervical carcinoma: an in vitro and in vivo study. Oncol Rep. 2009 Nov;22(5):1237-45.

[2]. Sharrett-Field L, et al. Mifepristone Pretreatment Reduces Ethanol Withdrawal Severity In Vivo. Alcohol Clin Exp Res. 2013 Aug;37(8):1417-23.

[3]. Jiang W, et al. New progesterone receptor antagonists: phosphorus-containing 11beta-aryl-substituted steroids. Bioorg Med Chem. 2006 Oct 1;14(19):6726-32.

[4]. Yuehua You, et al. Progesterone Promotes Endothelial Nitric Oxide Synthase Expression Through Enhancing Nuclear Progesterone receptor-SP1 Formation. Am J Physiol Heart Circ Physiol. 2020 Jul 3.

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

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA