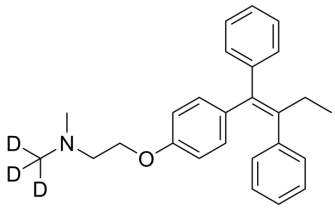
Tamoxifen-d_3

Cat. No.:	HY-13757AS1
CAS No.:	508201-30-7
Molecular Formula:	$C_{26}H_{26}D_3NO$
Molecular Weight:	374.53
Target:	Estrogen Receptor/ERR; Apoptosis; Autophagy; HSP
Pathway:	Vitamin D Related/Nuclear Receptor; Apoptosis; Autophagy; Cell Cycle/DNA Damage; Metabolic Enzyme/Protease
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Tamoxifen-d_3 is the deuterium labeled Tamoxifen[1]. Tamoxifen (ICI 47699) is an orally active, selective estrogen receptor modulator (SERM) which blocks estrogen action in breast cells and can activate estrogen activity in other cells, such as bone, liver, and uterine cells[2][3][4]. Tamoxifen is a potent Hsp90 activator and enhances the Hsp90 molecular chaperone ATPase activity. Tamoxifen also potent inhibits infectious EBOV Zaire and Marburg (MARV) with IC50 of 0.1 μM and 1.8 μM, respectively[6]. Tamoxifen activates autophagy and induces apoptosis[5]. Tamoxifen also can induce gene knockout of CreER(T2) transgenic mouse[7].
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 Feb;53(2):211-216.

[2]. Osborne CK. Tamoxifen in the treatment of breast cancer. N Engl J Med. 1998 Nov 26;339(22):1609-18.

[3]. Hawariah A, et al. In vitro response of human breast cancer cell lines to the growth-inhibitory effects of styrylpyrone derivative (SPD) and assessment of its antiestrogenicity. Anticancer Res. 1998 Nov-Dec18(6A):4383-6.

[4]. Jun Nagai, et al. Hyperactivity with Disrupted Attention by Activation of an Astrocyte Synaptogenic Cue. Cell. 2019 May 16177(5):1280-1292.e20.

[5]. Zhao R, et al. Tamoxifen enhances the Hsp90 molecular chaperone ATPase activity. PLoS One. 2010 Apr 15(4):e9934.

[6]. Kedjouar B, et al. Molecular characterization of the microsomal tamoxifen binding site. J Biol Chem. 2004 Aug 6279(32):34048-61.

[7]. Laura Cooper, et al. Screening and Reverse-Engineering of Estrogen Receptor Ligands as Potent Pan-Filovirus Inhibitors. J Med Chem. 2020 Sep 4.

[8]. Feil S, et, al. Inducible Cre mice. Methods Mol Biol. 2009530:343-63.

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

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