Proteins

Estradiol-13C₆

Cat. No.: HY-B0141S4 Molecular Formula: $C_{12}^{13}C_{6}H_{24}O_{2}$

Molecular Weight: 278.34

Target: Estrogen Receptor/ERR; Endogenous Metabolite; Isotope-Labeled Compounds

Vitamin D Related/Nuclear Receptor; Metabolic Enzyme/Protease; Others Pathway:

Storage: Please store the product under the recommended conditions in the Certificate of

Analysis.

Product Data Sheet

BIOLOGICAL ACTIVITY

Description	Estradiol- 13 C ₆ is the 13 C-labeled Estradiol. Estradiol is a steroid sex hormone vital to the maintenance of fertility and secondary sexual characteristics in females. Estradiol upregulates IL-6 expression through the estrogen receptor β (ER β) pathway[1][2][3].
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]. Harburger LL, et al. Dose-dependent effects of post-training estradiol plus progesterone treatment on object memory consolidation and hippocampal extracellular signal-regulated kinase activation in young ovariectomized mice. Neuroscience. 2009;160(1):6-12.
- [3]. Woolley CS, et al. Estradiol mediates fluctuation in hippocampal synapse density during the estrous cycle in the adult rat. J Neurosci. 1992 Jul;12(7):2549-54.
- [4]. Woolley CS, et al. Roles of estradiol and progesterone in regulation of hippocampal dendritic spine density during the estrous cycle in the rat. J Comp Neurol. 1993 Oct 8;336(2):293-306.
- [5]. Quanfu Huang, et al. 17β-estradiol Upregulates IL6 Expression Through the ERβ Pathway to Promote Lung Adenocarcinoma Progression. J Exp Clin Cancer Res. 2018 Jul 3;37(1):133.
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- [7]. Mermelstein PG, et al. Estradiol reduces calcium currents in rat neostriatal neurons via a membrane receptor. J Neurosci. 1996 Jan 15;16(2):595-604.

 $\label{lem:caution:Product} \textbf{Caution: Product has not been fully validated for medical applications. For research use only.}$

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Page 2 of 2 www.MedChemExpress.com