# Estradiol-d<sub>2</sub>-1

Cat. No.: HY-B0141S6 CAS No.: 3188-46-3 Molecular Formula:  $C_{18}H_{22}D_2O_2$ 

Molecular Weight: 274.39

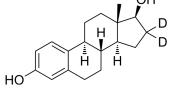
Target: Estrogen Receptor/ERR; Endogenous Metabolite; Isotope-Labeled Compounds

Pathway: Vitamin D Related/Nuclear Receptor; Metabolic Enzyme/Protease; Others Storage: Powder -20°C 3 years

4°C 2 years

-80°C In solvent 6 months

> -20°C 1 month



**Product** Data Sheet

## **BIOLOGICAL ACTIVITY**

Description	Estradiol- $d_2$ -1 is the deuterium 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 $\beta$ (ER $\beta$ ) pathway[1][2][3][4].
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 <sup>[1]</sup> .  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]. 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.
- [4]. 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.
- [5]. Woolley CS, et al. Estradiol increases the sensitivity of hippocampal CA1 pyramidal cells to NMDA receptor-mediated synaptic input: correlation with dendritic spine density. J Neurosci. 1997 Mar 1;17(5):1848-59.
- [6]. 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.
- [7]. 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.

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

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

Page 2 of 2 www.MedChemExpress.com