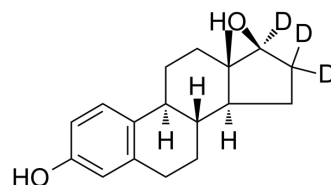


## Estradiol-d<sub>3</sub>

<b>Cat. No.:</b>	HY-B0141S		
<b>CAS No.:</b>	79037-37-9		
<b>Molecular Formula:</b>	C <sub>18</sub> H <sub>21</sub> D <sub>3</sub> O <sub>2</sub>		
<b>Molecular Weight:</b>	275.4		
<b>Target:</b>	Estrogen Receptor/ERR; Endogenous Metabolite		
<b>Pathway:</b>	Vitamin D Related/Nuclear Receptor; Metabolic Enzyme/Protease		
<b>Storage:</b>	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	6 months
		-20°C	1 month



### SOLVENT & SOLUBILITY

#### In Vitro

DMSO : 50 mg/mL (181.55 mM; Need ultrasonic)  
Ethanol : 20 mg/mL (72.62 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	3.6311 mL	18.1554 mL	36.3108 mL
	5 mM	0.7262 mL	3.6311 mL	7.2622 mL
	10 mM	0.3631 mL	1.8155 mL	3.6311 mL

Please refer to the solubility information to select the appropriate solvent.

#### In Vivo

- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline  
Solubility: ≥ 1.25 mg/mL (4.54 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)  
Solubility: ≥ 1.25 mg/mL (4.54 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil  
Solubility: ≥ 1.25 mg/mL (4.54 mM); Clear solution

### BIOLOGICAL ACTIVITY

#### Description

Estradiol-d<sub>3</sub> 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 β (ERβ) pathway.

#### 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

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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.

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## 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.; Woolley CS, et al. Roles of estradiol and progesterone in regulation of hippocampal dendritic s

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

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