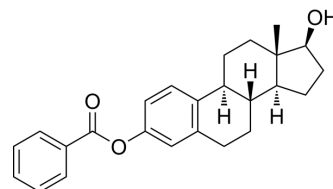


Estradiol benzoate

Cat. No.:	HY-B1192
CAS No.:	50-50-0
Molecular Formula:	C ₂₅ H ₂₈ O ₃
Molecular Weight:	376.49
Target:	Estrogen Receptor/ERR; HBV; Bcl-2 Family
Pathway:	Vitamin D Related/Nuclear Receptor; Anti-infection; Apoptosis
Storage:	Powder -20°C 3 years 4°C 2 years In solvent -80°C 2 years -20°C 1 year



SOLVENT & SOLUBILITY

In Vitro	DMSO : 50 mg/mL (132.81 mM; ultrasonic and warming and heat to 60°C)				
	H ₂ O : 0.1 mg/mL (0.27 mM; Need ultrasonic)				
	Preparing Stock Solutions	<div><div>Solvent</div><div>Concentration</div></div> <div>Mass</div>	1 mg	5 mg	10 mg
		1 mM	2.6561 mL	13.2806 mL	26.5611 mL
		5 mM	0.5312 mL	2.6561 mL	5.3122 mL
		10 mM	0.2656 mL	1.3281 mL	2.6561 mL
Please refer to the solubility information to select the appropriate solvent.					
In Vivo	1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: ≥ 2.5 mg/mL (6.64 mM); Clear solution				
	2. Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.5 mg/mL (6.64 mM); Clear solution				

BIOLOGICAL ACTIVITY

Description	Estradiol benzoate (β-Estradiol 3-benzoate) is a HBx protein inhibitor and inhibits androgen and hepatitis B virus (HBV) transcription, replication. Estradiol benzoate shows antifertility effects, anti- Toxoplasma gondii activity and can improve memory behavior of Ovariectomy (Ovx) female mice ^{[1][2][3][4][5]} .
IC ₅₀ & Target	Bax
In Vitro	Estradiol benzoate (5-75 μM, 24 h-48 h) has a downregulation effect on HBV translation, transcription, and replication in SBHX21 cells ^[3] . Estradiol benzoate (0-500 μM, 72 h) has toxicity to Human foreskin fibroblasts (HFFs) ^[4] .

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Cytotoxicity Assay^[4]

Cell Line:	HFFs
Concentration:	0-500 μ M
Incubation Time:	72 h
Result:	Inhibited HFFs at the 50% toxicity of 34.11 μ M.

In Vivo

Estradiol benzoate (20-100 μ g/kg, Subcutaneous injection, once a day for 4-5 weeks) improves learning and memory behavior of Ovx female mice^[1].

Estradiol benzoate (0.015-15000 μ g/kg, Subcutaneous injection, single dose) advances male puberty in male Sprague-Dawley (SD) rats^[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Ovx mice ^[1]
Dosage:	20, 100 or 200 μ g/kg
Administration:	Subcutaneous injection (s.c.)
Result:	Significantly reversed the lowered uterine weight induced by Ovx. Had no obvious effects on locomotor activity in Ovx mice. Effectively reversed the changes of enlarging the width of synaptic cleft and reducing the thickness of PSD induced by Ovx. Increased the number and density of synaptic vesicles by 4-week replacement with EB (100 μ g/kg).

CUSTOMER VALIDATION

- J Nanobiotechnology. 2023 Mar 8;21(1):81.
- iScience. 2023 Oct 5.
- Front Cell Dev Biol. 22 July 2022.
- J Ethnopharmacol. 2019 Dec 5;245:112181.
- Molecules. 2022, 27(15), 5000.

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- [1]. Xu X, et al. Effects of estradiol benzoate on learning-memory behavior and synaptic structure in ovariectomized mice [J]. Life sciences, 2006, 79(16): 1553-1560.
- [2]. Putz O, et al. Neonatal low-and high-dose exposure to estradiol benzoate in the male rat: I. Effects on the prostate gland [J]. Biology of reproduction, 2001, 65(5): 1496-1505.
- [3]. He J, et al. Identification of Estradiol Benzoate as an Inhibitor of HBx Using Inducible Stably Transfected HepG2 Cells Expressing HiBiT Tagged HBx [J]. Molecules, 2022, 27(15): 5000.
- [4]. Lu D, et al. Investigation of Antiparasitic Activity of Two Marine Natural Products, Estradiol Benzoate, and Octyl Gallate, on Toxoplasma gondii In Vitro [J]. Frontiers in

Pharmacology, 2022, 13: 841941.

[5]. Rao M V, et al. Effect of estradiol benzoate on reproductive organs and fertility in the male rat [J]. European Journal of Obstetrics & Gynecology and Reproductive Biology, 1983, 15(3): 189-198.

[6]. Zovko M, et al. Macromolecular prodrugs XI. Synthesis and characterization of polymer-estradiol conjugate. Int J Pharm. 2004 Nov 5;285(1-2):35-41.

[7]. García-Gómez E, et al. Role of sex steroid hormones in bacterial-host interactions. Biomed Res Int. 2013;2013:928290.

[8]. Estradiol benzoate

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

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