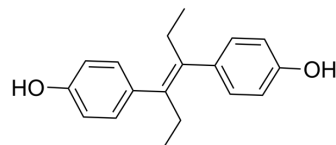


Diethylstilbestrol

Cat. No.:	HY-14598		
CAS No.:	56-53-1		
Molecular Formula:	C ₁₈ H ₂₀ O ₂		
Molecular Weight:	268.35		
Target:	Estrogen Receptor/ERR; Apoptosis; Autophagy		
Pathway:	Vitamin D Related/Nuclear Receptor; Apoptosis; Autophagy		
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 (186.32 mM; Need ultrasonic)				
		Solvent Concentration	Mass 1 mg	5 mg	10 mg
	Preparing Stock Solutions	1 mM	3.7265 mL	18.6324 mL	37.2648 mL
		5 mM	0.7453 mL	3.7265 mL	7.4530 mL
10 mM		0.3726 mL	1.8632 mL	3.7265 mL	
Please refer to the solubility information to select the appropriate solvent.					
In Vivo	<ol style="list-style-type: none"> Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.5 mg/mL (9.32 mM); Clear solution Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.5 mg/mL (9.32 mM); Clear solution 				

BIOLOGICAL ACTIVITY

Description	Diethylstilbestrol (Stilbestrol) is a non-steroidal female hormone that has oral activity and can act on menopausal and postmenopausal disorders. Diethylstilbestrol can induce DNA oxidation and Apoptosis of spermatogonial stem cells. Diethylstilbestrol can induce thymocyte Autophagy Diethylstilbestrol is a 11β-hydroxysteroid dehydrogenase 2 (HSD11B2) inhibitor. ^{[1][2][3][4][5][6][7][8]}
In Vitro	Diethylstilbestrol (0-100 μM) activates CatSper, and promotes Ca ²⁺ flux into human spermatozoa, and disturbs progesterone actions in human spermatozoa ^[5] . Diethylstilbestrol (0-10 μM, 1 h) induces oxidative DNA damage, and induces apoptosis of spermatogonial stem cells ^[5] . MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo

Diethylstilbestrol (2 µg/day, s.c.) stimulates ERα mediated hormonal toxicity in the mouse seminal vesicle, with alteration of target gene methylation patterns and epigenetic modifiers (DNMT3A, MBD2, and HDAC2)^[3].
Diethylstilbestrol (340 µg/kg, p.o., every 2 days for 2 weeks) decreases adrenal cholesterol and corticosterone in rats^[4].
Diethylstilbestrol (5 µg/kg, i.p.) reduces number of thymocytes, and induces autophagy in thymocytes of adult mice^[6].
Diethylstilbestrol (0.5 mg/kg, p.o.) decreases HSD11B2 activity in rat and human placenta^[8].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Adult mice ^[6]
Dosage:	5 µg/kg
Administration:	i.p.
Result:	Reduced number of thymocytes, and induced autophagy in thymocytes. Increased expression of Becn1, LC3 I and LC3 II.

CUSTOMER VALIDATION

- Chemosphere. 2020 Jun;249:126182.
- Biochem Biophys Res Commun. 2018 Sep 3;503(1):45-50.

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REFERENCES

- [1]. Li Y, et al. Diethylstilbestrol (DES)-stimulated hormonal toxicity is mediated by ERα alteration of target gene methylation patterns and epigenetic modifiers (DNMT3A, MBD2, and HDAC2) in the mouse seminal vesicle. *Environ Health Perspect.* 2014 Mar;122(3):262-8.
- [2]. Haeno S, et al. Diethylstilbestrol decreased adrenal cholesterol and corticosterone in rats. *J Endocrinol.* 2014 Apr 22;221(2):261-72.
- [3]. Zou QX, et al. Diethylstilbestrol activates CatSper and disturbs progesterone actions in human spermatozoa. *Hum Reprod.* 2017 Feb;32(2):290-298.
- [4]. Singh NP, et al. Diethylstilbestrol (DES) induces autophagy in thymocytes by regulating Beclin-1 expression through epigenetic modulation. *Toxicology.* 2018 Dec 1;410:49-58.
- [5]. Habas K, et al. Diethylstilbestrol induces oxidative DNA damage, resulting in apoptosis of spermatogonial stem cells in vitro. *Toxicology.* 2017 May 1;382:117-121.
- [6]. Wang Y, et al. Diethylstilbestrol inhibits human and rat 11β-hydroxysteroid dehydrogenase 2. *Endocr Connect.* 2019 Jul;8(7):1061-1069.
- [7]. Troisi, R., et al., Medical conditions among adult offspring prenatally exposed to diethylstilbestrol. *Epidemiology.* 2013. 24(3): p. 430-8.
- [8]. Kebir, O. and M.O. Krebs, Diethylstilbestrol and risk of psychiatric disorders: a critical review and new insights. *World J Biol Psychiatry.* 2012. 13(2): p. 84-95.

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