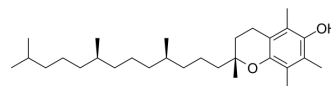


α -Vitamin E

Cat. No.:	HY-N0683
CAS No.:	59-02-9
Molecular Formula:	C ₂₉ H ₅₀ O ₂
Molecular Weight:	430.71
Target:	Reactive Oxygen Species; Endogenous Metabolite; Bacterial; Ferroptosis; Influenza Virus
Pathway:	Immunology/Inflammation; Metabolic Enzyme/Protease; NF- κ B; Anti-infection; Apoptosis
Storage:	4°C, protect from light, stored under nitrogen * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light, stored under nitrogen)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (232.17 mM; Need ultrasonic)
Ethanol : 100 mg/mL (232.17 mM; Need ultrasonic)
H₂O : < 0.1 mg/mL (ultrasonic) (insoluble)

	Solvent Concentration	Mass	1 mg	5 mg	10 mg
Preparing Stock Solutions	1 mM		2.3217 mL	11.6087 mL	23.2175 mL
	5 mM		0.4643 mL	2.3217 mL	4.6435 mL
	10 mM		0.2322 mL	1.1609 mL	2.3217 mL

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

In Vivo

- Add each solvent one by one: 10% EtOH >> 40% PEG300 >> 5% Tween-80 >> 45% saline
Solubility: \geq 11.25 mg/mL (26.12 mM); Clear solution
- Add each solvent one by one: 10% EtOH >> 90% (20% SBE- β -CD in saline)
Solubility: 11.25 mg/mL (26.12 mM); Suspended solution; Need ultrasonic
- Add each solvent one by one: 10% EtOH >> 90% corn oil
Solubility: \geq 11.25 mg/mL (26.12 mM); Clear solution
- Add each solvent one by one: 0.5% CMC-Na/saline water
Solubility: 10 mg/mL (23.22 mM); Suspended solution; Need ultrasonic
- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
Solubility: \geq 2.5 mg/mL (5.80 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE- β -CD in saline)
Solubility: 2.5 mg/mL (5.80 mM); Suspended solution; Need ultrasonic
- Add each solvent one by one: 10% DMSO >> 90% corn oil
Solubility: \geq 2.5 mg/mL (5.80 mM); Clear solution

BIOLOGICAL ACTIVITY

Description	α -Vitamin E ((+)- α -Tocopherol), a naturally occurring vitamin E form, is a potent antioxidant ^{[1][2]} .
IC ₅₀ & Target	Human Endogenous Metabolite
In Vitro	<p>α-Vitamin E ((+)-α-Tocopherol) is a peroxy radical scavenger. The importance of this function is to maintain the integrity of long-chain polyunsaturated fatty acids in the membranes of cells and thus maintain their bioactivity^[1].</p> <p>α-Vitamin E ((+)-α-Tocopherol) has been described to inhibit PKC in various cell types with consequent inhibition of platelet aggregation, endothelial cell nitric oxide production and superoxide production in neutrophils and macrophages. α-Vitamin E ((+)-α-Tocopherol) exposure induced the activation of both the MAP kinase and PI3 kinase (PI3K) pathways, suggesting that it is the oxidative stress that up-regulates kinase pathways and the antioxidant action of α-tocopherol protects the cell membrane fatty acids^[1].</p> <p>α-Vitamin E ((+)-α-Tocopherol) has proposed benefits for influenza virus A infection, as well as possible activity against hepatitis B and C. α-Vitamin E shows proviral effects, particularly in HEK293T/17 cells^[3].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>
In Vivo	<p>α-Vitamin E ((+)-α-Tocopherol) prevents the increase in the pro-inflammatory cytokines IL-1, IL-6, and IFN-γ mRNA and protein compared with the ischemic-reperfused myocardium from untreated pigs and compared to the non-injured area^[1].</p> <p>α-Vitamin E (D-α-Tocopherol; intraperitoneal injection or oral administration) treatment induces an amelioration of diabetic nephropathy in mice through the activation of diacylglycerol kinase α (DGKα) and the prevention of podocyte loss^[2].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>

CUSTOMER VALIDATION

- Nat Nanotechnol. 2021 Oct;16(10):1150-1160.
- Nat Commun. 2023 Oct 30;14(1):6908.
- Redox Biol. 2022 Aug;54:102392.
- Int J Mol Sci. 2023 Apr 28, 24(9), 8012.
- Molecules. 2020 Mar 9;25(5):1225.

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REFERENCES

- [1]. Maret G Traber, et al. Vitamin E, antioxidant and nothing more. Free Radic Biol Med. 2007 Jul 1;43(1):4-15.
- [2]. Daiki Hayashi, et al. Amelioration of diabetic nephropathy by oral administration of d- α -tocopherol and its mechanisms. Biosci Biotechnol Biochem. 2018 Jan;82(1):65-73.
- [3]. Atchara Paemanee, et al. Screening of melatonin, α -tocopherol, folic acid, acetyl-L-carnitine and resveratrol for anti-dengue 2 virus activity. BMC Res Notes. 2018 May 16;11(1):307.

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