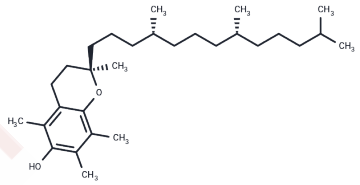
Data Sheet (Cat.No.T1648)

TargetMol

α-Vitamin E

Chemical Properties



CAS No. : 59-02-9

Formula: C29H50O2

Molecular Weight: 430.71

Storage: Keep away from direct sunlight,Store under nitrogen
Pure form: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	α-Vitamin E is a naturally occurring form of vitamin E with antioxidant and anti-inflammatory activity. α-Vitamin E can be used in research on oxidative stress, lipid peroxidation, membrane damage, and inflammation-related diseases.
Targets(IC50)	Ferroptosis,Reactive Oxygen Species,Endogenous Metabolite,Antibacterial,GST, Influenza Virus,PKC,ROS
In vitro	**Methods**: TC-1 mouse tumor cells (HPV16 E7+) were treated with α-Vitamin E (25, 50 μM) for 18 hours. Apoptosis and necrosis were detected by flow cytometry (Annexin V/7AAD staining). **Results**:α-Vitamin E induced TC-1 cell death in a concentration-dependent manner. At the high concentration (50 μM), the proportion of necrotic cells significantly increased. [1]
In vivo	**Methods**: C57BL/6 mice were subcutaneously inoculated with TC-1 cells.α-Vitamin E (2 mg/kg per dose) was administered via intraperitoneal injection starting on day 10 post-tumor inoculation, with subsequent injections on days 10, 12, and 14. Monitoring continued until approximately day 25. **Results**: Tumor volumes in the α-Vitamin E-treated group were significantly smaller than those in the control group. [1]
Cell Research	For in vitro cytotoxicity experiments, 1×105 TC-1 cells per well are added to 24-well plates. Eighteen hours later, tumor cells are treated with Vitamin E (0, 25, 50 μM). After 18 hours, apoptotic (Annexin V+ and 7AAD−) and necrotic (Annexin V+ and 7AAD+) cells are measured using PE Annexin V Apoptosis Detection Kit I. (Only for Reference)

Solubility Information

Solubility	DMSO: 262.5 mg/mL (609.46 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 1.2 mg/mL (2.79 mM),Solution. Saline: 25 mg/mL (58.04 mM),Solution. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may*

In vivo Formulation	*vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
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
50 mM	0.0464 mL	0.2322 mL	0.4643 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Kang TH, et al. Treatment of tumors with vitamin E suppresses myeloid derived suppressor cells and enhances CD8+ T cell-mediated antitumor effects. PLoS One. 2014 Jul 29;9(7):e103562.
Wang S, Li F, Qiao R, et al. Arginine-Rich Manganese Silicate Nanobubbles as a Ferroptosis-Inducing Agent for Tumor-Targeted Theranostics. ACS nano. 2018 Dec 26;12(12):12380-12392.
Wang S, Li F, Qiao R, et al. Arginine-Rich Manganese Silicate Nanobubbles as a Ferroptosis-Inducing Agent for Tumor-Targeted Theranostics[J]. ACS nano. 2018 Dec 26;12(12):12380-12392.
He F, Huang X, Wei G, et al. Regulation of ACSL4-Catalyzed Lipid Peroxidation Process Resists Cisplatin Ototoxicity. Oxidative Medicine and Cellular Longevity. 2022
Zhang H, Liang B, Sang X, et al.Discovery of Potential Inhibitors of SARS-CoV-2 Main Protease by a Transfer Learning Method.Viruses.2023, 15(4): 891.
Ning X, Chen X, Li R, et al.Identification of a Novel Cuproptosis Inducer That Induces ER Stress and Oxidative Stress to Trigger Immunogenic Cell Death in Tumors.Free Radical Biology and Medicine.2025