

Vitamin K5 hydrochloride

Chemical Properties

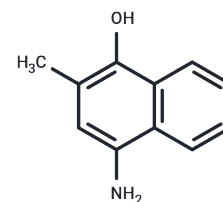
CAS No. : 130-24-5

Formula: C₁₁H₁₂ClNO

Molecular Weight: 209.67

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

HCl



Biological Description

Description	Vitamin K5 hydrochloride is a photosensitizer and antimicrobial agent that functions as a specific inhibitor of pyruvate kinase M2 (PKM2), with IC ₅₀ values of 28 μM for PKM2, 191 μM for PKM1, and 120 μM for PKL. Vitamin K5 hydrochloride induces apoptosis in colon 26 cells, supporting its application in infection and cancer research as well as its practical use as a preservative in pharmaceutical, food, and beverage formulations.
Targets(IC50)	PKM
In vitro	In antimicrobial assays, Vitamin K5 hydrochloride combined with UVA irradiation generated ROS to inactivate pathogens like E. coli and S. aureus. In cancer metabolism studies (Colon 26 cells), the compound (0-100 μM) inhibited PKM2, suppressing glucose consumption and lactate production, and induced caspase-3 mediated apoptosis [1].

Solubility Information

Solubility	DMSO: 100 mg/mL (476.94 mM), Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
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Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	4.7694 mL	23.847 mL	47.694 mL
5 mM	0.9539 mL	4.7694 mL	9.5388 mL
10 mM	0.4769 mL	2.3847 mL	4.7694 mL
50 mM	0.0954 mL	0.4769 mL	0.9539 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

Xu F, et al. Vitamin K5 is an efficient photosensitizer for ultraviolet A light inactivation of bacteria. *FEMS Microbiol Lett.* 2018 Feb 1;365(4).

Chen J, et al. Vitamin K(3) and K(5) are inhibitors of tumor pyruvate kinase M2. *Cancer Lett.* 2012 Mar 28;316(2): 204-10.

Ogawa M, et al. Vitamins K2, K3 and K5 exert antitumor effects on established colorectal cancer in mice by inducing apoptotic death of tumor cells. *Int J Oncol.* 2007 Aug;31(2):323-31.

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