

Product Data Sheet

Product Name: Strophanthidin

Cat. No.: GC63832

Chemical Properties

Cas. No. 66-28-4

Formula $C_{23}H_{32}O_6$

M.Wt 404.5

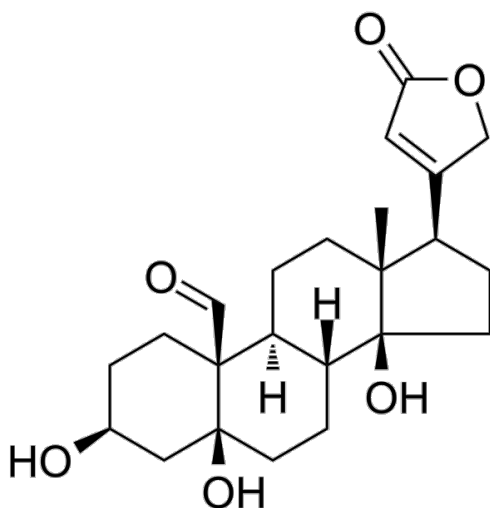
Solubility Ethanol : 25 mg/mL (61.80 mM;
Need ultrasonic)

Storage Store at -20°C

General tips For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.

Structure



Background

Strophanthidin is a naturally available cardiac glycoside[1]. Strophanthidin 0.1 and 1 nmol/L increases and 1~100 $\mu\text{mol/L}$ inhibits the Na^+/K^+ -ATPase activities, but Strophanthidin 10 and 100 nmol/L does not affect Na^+/K^+ -ATPase activities in cardiac sarcolemmal[2]. Strophanthidin increases both diastolic and systolic intracellular Ca^{2+} concentration[3].

Strophanthidin (0~10 μM ; 24 hours; MCF-7, A549, and HepG2 cells) is effective at suppressing the growth of cancer cells and has no toxicity in normal cells[1]. Strophanthidin (0.5 to 500 μM ; PBMCs)

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

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does not show significant cytotoxicity in PBMCs. Strophanthidin (2 μ M; MCF-7 cells) can arrest cell cycle at the G2/M phase[1]. Strophanthidin (MCF-7, A549, and HepG2 cells) is effective at suppressing the growth of cancer cells and has no toxicity in normal cells. Strophanthidin (MCF-7, A549, and HepG2 cells) inhibits the expression of checkpoint and cyclin-dependent kinases in three cancer cells compared to untreated controls. Strophanthidin can modulate the protein localization from the nucleus to the membrane as well as to the cytoplasm. Strophanthidin is a monosaccharide cardiac glycoside with one aglycone portion and without any sugar unit. Strophanthidin induces apoptosis by the attenuation of multiple biochemical signaling pathways and by arresting cell cycle at the G2/M phase through p53-dependent and p53-independent mechanisms[1].

[1]. Reddy D, et al. Strophanthidin Attenuates MAPK, PI3K/AKT/mTOR, and Wnt/ β -Catenin Signaling Pathways in Human Cancers. *Front Oncol.* 2020;9:1469. Published 2020 Jan 17.

[2]. Su SW, et al. Relationship between cardiotonic effects and inhibition on cardiac sarcolemmal Na⁺,K⁺-ATPase of strophanthidin at low concentrations. *Acta Pharmacol Sin.* 2003;24(11):1103-1107.

[3]. Bennett DL, et al. Strophanthidin-induced gain of Ca²⁺ occurs during diastole and not systole in guinea-pig ventricular myocytes. *Pflugers Arch.* 1999;437(5):731-736.

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