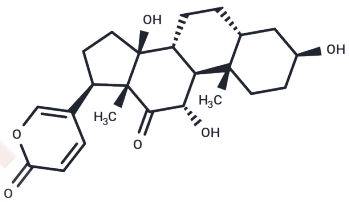
Data Sheet (Cat.No.T5A2455)

TargetMol

Arenobufagin

Chemical Properties



CAS No. : 464-74-4

Formula: C24H32O6

Molecular Weight: 416.51

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

Biological Description

Description	Arenobufagin, a natural bufadienolide from toad venom, exhibits potent antineoplastic activity against HCC HepG2 cells and corresponding multidrug-resistant HepG2/ADM cells.
Targets(IC50)	Apoptosis,Others,Akt,Caspase,Autophagy,mTOR,PARP,PI3K,ATG
In vitro	Arenobufagin induced mitochondria-mediated apoptosis in HCC cells, with decreasing mitochondrial potential, as well as increasing Bax/Bcl-2 expression ratio, Bax translocation from cytosol to mitochondria. Arenobufagin also induced autophagy in HepG2/ADM cells. Autophagy-specific inhibitors (3-methyladenine, chloroquine and bafilomycin A1) or Beclin1 and Atg 5 small interfering RNAs (siRNAs) enhanced arenobufagin-induced apoptosis, indicating that arenobufagin-mediated autophagy may protect HepG2/ADM cells from undergoing apoptotic cell death [1]. arenobufagin inhibited vascular endothelial growth factor (VEGF)-induced viability, migration, invasion and tube formation in human umbilical vein endothelial cells (HUVECs) in vitro [2]. Arenobufagin blocked the Na+/K+ pump current in a dose-dependent manner with a half-maximal concentration of 0.29 microM and a Hill coefficient of 1.1 [3].
In vivo	Arenobufagin inhibited the growth of HepG2/ADM xenograft tumors, which were associated with poly (ADP-ribose) polymerase cleavage, light chain 3-II activation and mTOR inhibition [1]. Arenobufagin also suppressed sprouting formation from VEGF-treated aortic rings in an ex vivo model [2].

Solubility Information

Solubility	DMSO: 250 mg/mL (600.23 mM),Sonication is recommended. Ethanol: 10 mg/mL (24.01 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+90% Saline: < 10 mg/mL (24.01 mM),Lower concentrations may be soluble, but exact solubility limit is unknown. 10% DMSO+40% PEG300+5% Tween 80+45% Saline: 10 mg/mL (24.01 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 vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.4009 mL	12.0045 mL	24.009 mL
5 mM	0.4802 mL	2.4009 mL	4.8018 mL
10 mM	0.2401 mL	1.2005 mL	2.4009 mL
50 mM	0.048 mL	0.2401 mL	0.4802 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

Zhang DM, et al. Arenobufagin, a natural bufadienolide from toad venom, induces apoptosis and autophagy in human hepatocellular carcinoma cells through inhibition of PI3K/Akt/mTOR pathway. Carcinogenesis. 2013 Jun;34 (6):1331-42.
Li M, et al. Arenobufagin, a bufadienolide compound from toad venom, inhibits VEGF-mediated angiogenesis through suppression of VEGFR-2 signaling pathway. Biochem Pharmacol. 2012 May 1;83(9):1251-60.
Cruz Jdos S, et al. Arenobufagin, a compound in toad venom, blocks Na(+)-K+ pump current in cardiac myocytes. Eur J Pharmacol. 1993 Aug 3;239(1-3):223-6.