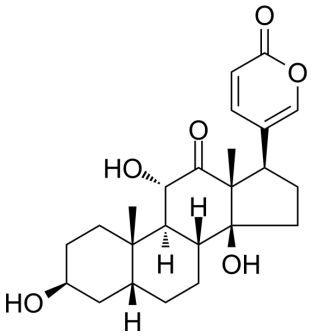
Arenobufagin

Cat. No.:	HY-N0876		
CAS No.:	464-74-4		
Molecular Formula:	$C_{24}H_{32}O_6$		
Molecular Weight:	416.51		
Target:	Others		
Pathway:	Others		
Storage:	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	6 months
		-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (240.09 mM; Need ultrasonic)
Ethanol : 10 mg/mL (24.01 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	2.4009 mL	12.0045 mL	24.0090 mL
5 mM	0.4802 mL	2.4009 mL	4.8018 mL
10 mM	0.2401 mL	1.2005 mL	2.4009 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 6.25 mg/mL (15.01 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 6.25 mg/mL (15.01 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 6.25 mg/mL (15.01 mM); Clear solution
4. Add each solvent one by one: 10% EtOH >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 1 mg/mL (2.40 mM); Clear solution
5. Add each solvent one by one: 10% EtOH >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 1 mg/mL (2.40 mM); Clear solution
6. Add each solvent one by one: 10% EtOH >> 90% corn oil
   Solubility: ≥ 1 mg/mL (2.40 mM); Clear solution

BIOLOGICAL ACTIVITY

Description	Arenobufagin is a natural bufadienolide from toad venom; has potent antineoplastic activity against HCC HepG2 cells as well as corresponding multidrug-resistant HepG2/ADM cells.IC50 value: Target: 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].

CUSTOMER VALIDATION

- Molecules. 2017 Sep 11;22(9). pii: E1525.
- Research Square Preprint. 2023 Aug 11.
- Evid-Based Compl Alt. 2020 Apr 22;2020:8909171.

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REFERENCES

[1]. 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.

[2]. 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.

[3]. 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.

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