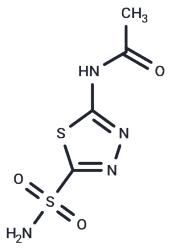
Data Sheet (Cat.No.T0813)

TargetMol

Acetazolamide

Chemical Properties



CAS No. :	59-66-5
Formula:	C4H6N4O3S2
Molecular Weight:	222.25
Storage:	Keep away from direct sunlight,Store at low temperature 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	Acetazolamide (Diamox) is a Carbonic Anhydrase Inhibitor. The mechanism of action of acetazolamide is as a Carbonic Anhydrase Inhibitor. The chemical classification of acetazolamide is Sulfonamides.
Targets(IC50)	Antibacterial,Carbonic Anhydrase,Autophagy
In vitro	acetazolamide reduces invasiveness of cancer cells in vitro[3].
In vivo	Acetazolamide reduces inflammation-induced heat hyperalgesia, probably acting both peripherally and centrally[1]. Acetazolamide shows significant inhibitory effect on angiogenesis in CAM and endothelial cell proliferation[2]. Acetazolamide is clinically used to reduce intraocular pressure in glaucoma, to correct metabolic alkalosis, and to manage cerebral edema. Its treatment may also be beneficial as an adjunct to cancer chemotherapy, because it can produce additive tumor growth delays with anticancer drugs in vivo[3].
Cell Research	The invasion assay is performed in a Biocoat Matrigel invasion chamber. Cells (n = 1.8 × 105) are added to the chamber and cultured for 48 h in the presence or absence of acetazolamide, which was administered twice during the 48-h period: the first dose at the beginning of the assay and the second after 24 h. After growing for 48 h, noninvasive cells are removed from the upper surface of the membrane with a cotton swab. The invasive cells on the lower surface of the membrane are fixed with 4% (vol/vol) neutral-buffered formaldehyde, stained with toluidine blue, and counted in 20 separate areas with a Leitz Diaplan microscope. (Only for Reference)

Solubility Information

Solubility	Ethanol: <1 mg/mL, DMSO: 84.17 mg/mL (378.72 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: 2 mg/mL (9 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one.*

In vivo Formulation	*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	4.4994 mL	22.4972 mL	44.9944 mL
5 mM	0.8999 mL	4.4994 mL	8.9989 mL
10 mM	0.4499 mL	2.2497 mL	4.4994 mL
50 mM	0.090 mL	0.4499 mL	0.8999 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

Radhakrishnan R, et al. J Pharmacol Exp Ther. 2005, 313(2):921-927.
Xiang Y,et al. Acta Pharmacol Sin. 2004, 25(6):812-816.
Parkkila S, et al. Proc Natl Acad Sci U S A. 2000, 97(5):2220-2224.
Hardman, J.G., et al. Goodman and Gilman's The Pharmacological Basis of Therapeutics. 9th ed. New York, NY: McGraw-Hill, 1996, p. 693.
Bayat Mokhtari R, et al. Acetazolamide potentiates the anti-tumor potential of HDACi, MS-275, in neuroblastoma. BMC Cancer. 2017 Feb 24;17(1):156.
Gao H, et al. Combined treatment with acetazolamide and cisplatin enhances chemosensitivity in laryngeal carcinoma Hep-2 cells. Oncol Lett. 2018 Jun;15(6):9299-9306.