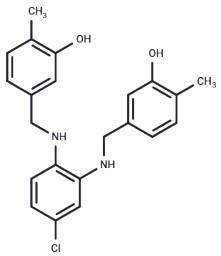
Data Sheet (Cat.No.T22317)

TargetMol

DRB18

Chemical Properties



CAS No. : 2863686-81-9

Formula: C22H23ClN2O2

Molecular Weight: 382.88

Storage: 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	DRB18 is a highly effective pan-class inhibitor of glucose transporter proteins (GLUT). It significantly modulates energy-related metabolism in A549 cells by inducing alterations in the abundance of metabolites associated with glucose-related pathways. DRB18 exerts its effects by promoting G1/S phase arrest, increasing oxidative stress, and prompting necrotic cell death, ultimately displaying notable anti-tumor activity [1].
Targets(IC50)	transporter
In vitro	DRB18 (0-10 μM; 30 min) demonstrably decreases glucose absorption in a dose-dependent manner within HEK293 cells expressing GLUT1-4, with inhibitory concentration (IC50) values ranging approximately from 900 nM to 9 μM [1]. Additionally, at concentrations of 5 and 10 μM over 72 hours, DRB18 induces cell cycle arrest at the G1/S phase transition and elevates reactive oxygen species (ROS) levels in A549 cells [1]. Concurrently, it diminishes the expression of the glycosylated forms of GLUT1 and GLUT2-4 in A549 cells, following a dose-responsive relationship [1]. These findings were derived from cell proliferation assays on HEK293 cell lines, and cell cycle as well as western blot analyses on A549 cell lines, underscoring DRB18's multifaceted biochemical impacts.
In vivo	DRB18 administered at a dosage of 10 mg/kg intraperitoneally (IP) three times a week for five weeks significantly reduced tumor volume and weight by 44% and 43%, respectively, in male NU/J nude mice aged 3-4 weeks with injected tumor cells. This treatment also resulted in decreased expression of GLUT1-4 and reduced proliferative capacity within the xenografted tumor.

Solubility Information

Solubility	DMSO: 45 mg/mL (117.53 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.6118 mL	13.0589 mL	26.1178 mL
5 mM	0.5224 mL	2.6118 mL	5.2236 mL
10 mM	0.2612 mL	1.3059 mL	2.6118 mL
50 mM	0.0522 mL	0.2612 mL	0.5224 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

Shriwas P, Roberts D, Li Y, et al. A small-molecule pan-class I glucose transporter inhibitor reduces cancer cell proliferation in vitro and tumor growth in vivo by targeting glucose-based metabolism. Cancer Metab. 2021;9(1): 14. Published 2021 Mar 26.