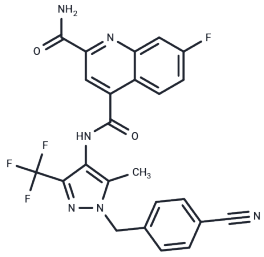
Data Sheet (Cat.No.T3713)

TargetMol

BAY-876

Chemical Properties



CAS No. : 1799753-84-6

Formula: C24H16F4N6O2

Molecular Weight: 496.42

Appearance: no data available

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Biological Description

Description	BAY-876 is an orally active, selective inhibitor of glucose transporter 1 (GLUT1, IC50= 2 nM), exhibiting over 130-fold greater selectivity for GLUT1 than GLUT2, GLUT3, and GLUT4. It also inhibits glycolytic metabolism and ovarian cancer growth.
Targets(IC50)	transporter
In vitro	**METHODS**: HNSCC cell lines SCC47 and RPMI2650 were treated with BAY-876 (0.01-100 μM) for 24 h. Cell viability was detected by crystal violet staining. **RESULTS**: After 24 h, BAY-876 reduced the viable SCC47 and RPMI2650 cells. [1] **METHODS**: Ovarian cancer cells SKOV-3, OVCAR-3 and HEY were treated with BAY-876 (25-75 nM) for 24 h. The rate of glycolysis was detected by Glycolysis Assay. **RESULTS**: Incubation with BAY-876 dose-dependently decreased the rate of glycolysis in SKOV-3, OVCAR-3 and HEY cells. Although this anti-glycolytic effect of BAY-876 was detectable at single-digit nanomolar concentrations, half-maximal inhibition was achieved at 25-50 nM of the compound. [2]
In vivo	**METHODS**: To detect the antitumor activity in vivo, BAY-876 (1.5-4.5 mg/kg, 0.5% hydroxypropyl methyl cellulose and 0.1% Tween 80) was administered by gavage to NSG mice bearing SKOV-3 xenografts once a day for four weeks. **RESULTS**: BAY-876 showed a significant dose-dependent inhibitory effect on tumorigenicity. The maximum effect was observed in the 4.5 mg/kg/day treatment group. After 2 weeks of treatment, tumors were significantly reduced. At the endpoint, final mean tumor volume and tumor weight decreased by 68% and 66%, respectively, compared to the excipient control group. However, the dose of 4.5 mg/kg/day was toxic to NSG mice. [2]

Solubility Information

Solubility	H2O: < 1 mg/mL (insoluble or slightly soluble), Ethanol: 3 mg/mL (6.04 mM),Sonication is recommended. DMSO: 15 mg/mL (30.23 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.0144 mL	10.0721 mL	20.1442 mL
5 mM	0.4029 mL	2.0144 mL	4.0288 mL
10 mM	0.2014 mL	1.0072 mL	2.0144 mL
50 mM	0.0403 mL	0.2014 mL	0.4029 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.

Reference

Miller ZA, et al. GLUT1 inhibitor BAY-876 induces apoptosis and enhances anti-cancer effects of bitter receptor agonists in head and neck squamous carcinoma cells. Cell Death Discov. 2024 Jul 25;10(1):339.
Pei Y, Lv S, Shi Y, et al. RAB21 controls autophagy and cellular energy homeostasis by regulating retromer-mediated recycling of SLC2A1/GLUT1. Autophagy. 2022: 1-17
Chen X, Zhao Y, He C, et al. Identification of a novel GLUT1 inhibitor with in vitro and in vivo anti-tumor activity. International Journal of Biological Macromolecules. 2022, 216: 768-778.
Ma Y, et al. Ovarian Cancer Relies on Glucose Transporter 1 to Fuel Glycolysis and Growth: Anti-Tumor Activity of BAY-876. Cancers (Basel). 2018 Dec 31;11(1):33.
Zhang M, Tan Y, Song Y, et al.GLUT4 mediates the protective function of gastrodin against pressure overload-induced cardiac hypertrophy.Biomedicine & Pharmacotherapy.2023, 161: 114324.