Product Data Sheet

Product Name: IDF-11774
Cat. No.: GC32948

Chemical Properties

Cas. No.	1429054-28-3		
SMILES	CN1CCN(C(COC2=CC=C(C3(C4)CC5CC4CC(C5)C3)C=C2)=O)CC1		
Formula	$C_{23}H_{32}N_2O_2$	M.Wt	368.51
Solubility	DMSO : 60 mg/mL (162.82 mM)	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		
Structure	IDF-11774		

Protocol

Animal experiment: Female Balb/c nude mice are used in this study. Cancer cells are injected subcutaneously into 4- to 6-week-old female Balb/c nude mice to generate tumors (5 mice per group). When the tumors grow to 100 mm3, IDF-11774 is administered orally (per oral) or intravenously for 15 days. Tumor volumes (V) are determined using the following equation: V (mm3)= (length×width×height)×0.5. Percentage tumor growth inhibition (%TGI) values are calculated for each treatment group versus the control[1].

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References:

[1]. Ban HS, et al. The novel hypoxia-inducible factor-1α inhibitor IDF-11774 regulates cancer metabolism, thereby suppressing tumor growth. Cell Death Dis. 2017 Jun 1;8(6):e2843.

Background

IDF-11774 is a hypoxia-inducible factor-1 (HIF-1) inhibitor. It reduces the HRE-luciferase activity of HIF-1α (IC50 = 3.65 μM) and blocks HIF-1α accumulation under hypoxia in HCT116 human colon cancer cells.

IDF-11774 inhibits the accumulation of HIF-1α in vitro and in vivo in colorectal carcinoma HCT116 cells under hypoxic conditions. The treatment of IDF-11774 suppresses angiogenesis of cancer cells by reducing the expression of HIF-1 target genes, reduces glucose uptake, thereby sensitizing cells to growth under low glucose conditions, and decreases the extracellular acidification rate (ECAR) and oxygen consumption rate of cancer cells. Therefore, IDF-11774 reduces cancer cell growth through the regulation of cancer glycolytic metabolism and energy production[1].

IDF-11774 exhibited substantial anticancer efficacy in mouse models containing KRAS, PTEN, or VHL mutations, which often occur in malignant cancers[1].

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