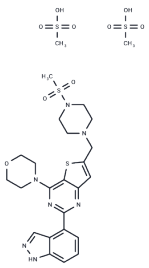
Data Sheet (Cat.No.T11381)

TargetMol

Pictilisib dimethanesulfonate

Chemical Properties



CAS No. : 957054-33-0

Formula: C25H35N7O9S4

Molecular Weight: 705.85

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	Pictilisib dimethanesulfonate (GDC-0941 2 MeSO3H salt) is a potent inhibitor of PI3Kα/δ with IC50 of 3 nM, with modest selectivity against p110β (11-fold) and p110γ (25-fold).
Targets(IC50)	Apoptosis,Autophagy,DNA-PK,mTOR,PI3K
In vitro	Pictilisib (GDC-0941) demonstrates high efficacy in inhibiting cell growth, inducing G0-G1 arrest, and promoting apoptosis, especially when used in combination with U0126. It shows increased sensitivity in H460 cells harboring PIK3CA mutations over A549 cells with wild-type PIK3CA, by diminishing PI3K pathway activity as evidenced by reduced pAK levels. Pictilisib significantly lowers VEGF secretion in the medium following hypoxic/anoxic conditions across all tested cell lines. In breast cancer cell model systems, Pictilisib, alongside RP-56976, considerably decreases tumor cell viability by 80% or more, surpassing the effects of single-agent treatments. It effectively inhibits Akt phosphorylation and affects downstream targets including pPRAS40 and pS6 in various tumor models such as Hs578T1.2 (PI3Kα wild-type), MCF7-neo/HER2 (PI3Kα-mutant), and MX-1 (PTEN-null). Furthermore, Pictilisib reduces the duration of RP-56976-induced mitotic arrest, leading to apoptosis, and exhibits strong antitumor activity against ZD1839-resistant NSCLC cell lines, A549 and H460, highlighting its potential as a therapeutic agent in cancer treatment.
In vivo	Pictilisib (GDC-0941)-treated mice display substantial, non-linear tumor shrinkage that reverses upon cessation of treatment, indicating a dependency on continuous administration for sustained efficacy. At doses of 25 or 50 mg/kg, Pictilisib effectively diminishes tumor growth and inhibits the PI3K and HIF-1 pathways in eGFP-FTC133 tumor-bearing mice. Additionally, a higher dose of 150 mg/kg administered orally achieves tumor stasis in MCF7-neo/HER2 model animals. The combination of Pictilisib with RP-56976 facilitates tumor regression and enhances antitumor responses during the treatment regimen, suggesting a synergistic interaction between the two compounds.

Solubility Information

Solubility	DMSO: 50 mg/mL (70.84 mM),Sonication is recommended. H2O: < 0.1 mg/mL (insoluble), (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.4167 mL	7.0837 mL	14.1673 mL
5 mM	0.2833 mL	1.4167 mL	2.8335 mL
10 mM	0.1417 mL	0.7084 mL	1.4167 mL
50 mM	0.0283 mL	0.1417 mL	0.2833 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

Wallin JJ, et al. GDC-0941, a novel class I selective PI3K inhibitor, enhances the efficacy of RP-56976 in human breast cancer models by increasing cell death in vitro and in vivo.Clin Cancer Res. 2012 Jul 15;18(14):3901-11. Epub 2012 May 14.
Folkes AJ, et al. The identification of 2-(1H-indazol-4-yl)-6-(4-methanesulfonyl-piperazin-1-ylmethyl)-4-morpholin-4-yl-thieno[3,2-d]pyrimidine (GDC-0941) as a potent, selective, orally bioavailable inhibitor of class I PI3 kinase for the treatment of cancer . J Med Chem. 2008 Sep 25;51(18):5522-32.
Wullschleger S, et al. Quantitative MRI establishes the efficacy of PI3K inhibitor (GDC-0941) multi-treatments in PTEN-deficient mice lymphoma.Anticancer Res. 2012 Feb;32(2):415-20.
Zou ZQ, et al. The novel dual PI3K/mTOR inhibitor GDC-0941 synergizes with the MEK inhibitor U0126 in non-small cell lung cancer cells.Mol Med Report. 2012 Feb;5(2):503-8.
Burrows N, et al. GDC-0941 inhibits metastatic characteristics of thyroid carcinomas by targeting both the phosphoinositide-3 kinase (PI3K) and hypoxia-inducible factor-1α (HIF-1α) pathways.J Clin Endocrinol Metab. 2011 Dec;96(12):E1934-43. Epub 2011 Oct