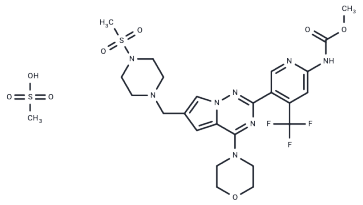
Data Sheet (Cat.No.T38979)

TargetMol
YOUR TARGET MOLECULES

CYH33 methanesulfonate

Chemical Properties



CAS No. : 1494684-33-1

Formula: C25H33F3N8O8S2

Molecular Weight: 694.7

Appearance: no data available

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

Biological Description

Description	CYH33 methanesulfonate is a highly selective and orally active inhibitor of PI3Kα, with IC50 values of 5.9 nM, 598 nM, 78.7 nM, and 225 nM against the α, β, δ, and γ isoforms, respectively. This compound effectively inhibits the phosphorylation of Akt and ERK, leading to a significant G1 phase arrest in breast cancer cells and non-small cell lung cancer (NSCLC) cells. Additionally, CYH33 methanesulfonate demonstrates potent activity against solid tumors.
In vitro	CYH33 methanesulfonate demonstrates inhibitory effects on cell proliferation, showing IC50 values below 1μM in 56% (18/32) of breast cancer cell lines tested. In a concentration-dependent manner, CYH33 (0.012-1 μM; 24 hours) significantly arrests T47D and MCF7 cells in the G1 phase and concurrently diminishes the phosphorylation of ERK and Akt in these cells (4-1000 nM; 1 hour), indicating targeted action on key cell cycle and survival pathways. However, it does not induce apoptosis in MCF7 and MDA-MB-231 cells (0.11-1 μM; 24 hours). Cell cycle analysis further confirmed that CYH33 arrests sensitive T47D and MCF7 cells in the G1 phase in a concentration-dependent manner, reducing the S phase cell population, with minimal effects on the resistant MDA-MB-231 cell cycle distribution. Western blot analysis supports these findings, showing inhibited phosphorylation of ERK and Akt in sensitive cell lines without significant impact on phosphorylated ERK (pERK) in MDA-MB-231 cells up to 1μM.
In vivo	Administered orally at doses ranging from 2-20 mg/kg once daily for 21 days, CYH33 methanesulfonate effectively inhibits tumor growth in SCID mice implanted with human breast cancer T47D xenografts. At the highest dosage (20 mg/kg), it significantly reduces phosphorylated Akt levels in tumor tissues, indicating the suppression of the PI3K signaling pathway. Additionally, CYH33 methanesulfonate, at a dosage of 10 mg/kg given daily for 18 to 20 days, delays the recovery of blood glucose levels and increases the area under the curve (AUC) for blood glucose in T47D xenograft and R26-Pik3ca H1047R; MMTV-Cre mice models. The study shows a minimal inhibitory effect on tumor growth at lower doses (2 and 5 mg/kg), while doses of 10 or 20 mg/kg significantly reduce tumor growth, with T/C values of 58.36% and 49.42%, respectively.

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.4395 mL	7.1974 mL	14.3947 mL
5 mM	0.2879 mL	1.4395 mL	2.8789 mL
10 mM	0.1439 mL	0.7197 mL	1.4395 mL
50 mM	0.0288 mL	0.1439 mL	0.2879 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

Haoyue Xiang, et al. Abstract LB-268: Discovery of clinical candidate methyl (5-(6-((4-(methylsulfonyl)piperazin-1-yl)methyl)-4-morpholinopyrrolo[2,1-f][1,2,4]triazin-2-yl)-4-(trifluoromethyl)pyridin-2-yl)carbamate (CYH33) : A