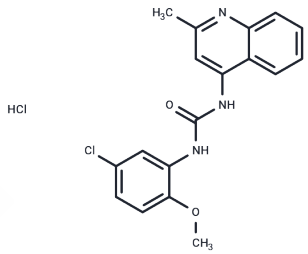
Data Sheet (Cat.No.T4324)

TargetMol

PQ401 hydrochloride (196868-63-0(free base))

Chemical Properties



CAS No. :

Formula: C18H17Cl2N3O2

Molecular Weight: 378.25

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	PQ401 inhibits autophosphorylation of IGF-1R domain with IC50 of <1 μM.
Targets(IC50)	IGF-1R
In vitro	PQ 401 is an IGF-1R inhibitor and inhibits autophosphorylation of the IGF-IR kinase domain at concentrations <100 nM, with an IC50 <1 μM. PQ 401 significantly reduced proliferation of MCF-7 cells with IC50 of 8 μM. PQ 401 also inhibits growth of MCNeuA cells with IC50 of 15 μM. PQ 401 inhibits the IGF-I-mediated antiapoptotic pathway in MCF-7 cells. PQ 401 increases caspase-mediated apoptotic activity in MCF-7 cells.
In vivo	PQ 401 (50 mg/Kg, 100 mg/Kg) significantly inhibits MCNeuA tumor growth in a dose-dependent manner.
Kinase Assay	IGF-IR Peptide Autophosphorylation:One microgram of constitutively active IGF-IR kinase domain peptide isincubated +/? varying concentrations of PQ 401 in 2% DMSO in 40 mM Tris (pH 7.4), 80 μMEGTA, 0.25% 2-mercaptoethanol, 80 μM Na3VO4, 10 mM MgCl2, and 2 mM MnCl2 for 20 minutes. ATP is then added at a final concentration of 20 μM. Autophosphorylation of the kinase domain peptide isallowed to occur for 20 minutes at 22°C. The reaction isstopped by the addition of SDS-reducing buffer and the samples are run on SDS-PAGE. Following transfer to nitrocellulose membrane, peptide autophosphorylation isdetermined by Western blotting employing an antibody against phosphotyrosine (PY20).
Cell Research	Cell lines: MCF-7,MCNeuA. Concentrations: ~50 μM. Incubation Time: 3 days. Method: The inhibitory effects of diaryl urea on breast cancer cell growth are determined using a CyQuant cell proliferation assay kit.MCF-7 or MCNeuA cells are plated in 96-well plates (5×103 per well) in phenol red-free DMEM supplemented with 10% FCS.One plate isprepared for each harvest day.Cells are allowed to adhere overnight and are then treated with various concentrations of diaryl urea or DMSO as a vehicle control. Microplate cultures are harvested on days 0,1,2,and 3 by inverting the microplate onto paper towels with gentle blotting to remove growth medium without disrupting adherent cells.Each plate iskept at ?80 ℃ until the end of the experiment (day 3) when all of the plates are thawed and assayed together.After thawing,200 μL of CyQuant GR solution are added to each well and the plates are incubated in the dark for 2 to 5 minutes.Fluorescence ismeasured with a SpectraMax Gemini XS fluorescence microplate reader with 480-nm excitation and 520-nm emission.Proliferation index iscalculated as

Cell Research	the percent of nucleotide content versus control cells at day 0.
Animal Research	Animal Models: FVB/N-TgN(MMTVneu)202 mouse injected with MCNeuA cells. Formulation: 8% polysorbate 80 and ethanol. Dosages: 50 or 100 mg/kg. Administration: i.p.

Solubility Information

Solubility	DMSO: 45 mg/mL (118.97 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.6438 mL	13.2188 mL	26.4375 mL
5 mM	0.5288 mL	2.6438 mL	5.2875 mL
10 mM	0.2644 mL	1.3219 mL	2.6438 mL
50 mM	0.0529 mL	0.2644 mL	0.5288 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

Gable KL,etal, Diarylureas are small-molecule inhibitors of insulin-like growth factor I receptor signaling and breast cancer cell growth. Mol Cancer Ther. 2006 Apr;5(4):1079-86.
Troib A,etal. The effects of type 1 IGF receptor inhibition in a mouse model of diabetic kidney disease. Growth Horm IGF Res. 2011 Oct;21(5):285-91.
Sanchez-Alavez M, Osborn O, Tabarean IV, Insulin-like growth factor 1-mediated hyperthermia involves anterior hypothalamic insulin receptors. J Biol Chem. 2011 Apr 29;286(17):14983-90.