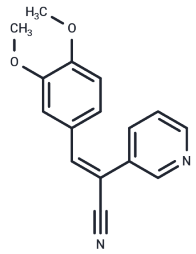
Data Sheet (Cat.No.T3545)

TargetMol

RG13022

Chemical Properties



CAS No. : 136831-48-6

Formula: C16H14N2O2

Molecular Weight: 266.29

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	RG13022 (Tyrphostin RG13022) is a tyrosine kinase inhibitor; inhibits the autophosphorylation reaction of the EGF receptor (IC50: 4 μM).
Targets(IC50)	EGFR
In vitro	RG13022 suppresses EGF-stimulated cancer cell proliferation and inhibits EGF receptor autophosphorylation in immunoprecipitates (IC50: 4 μM) in a cell-free reaction. It inhibits colony formation (IC50: 1 μM) and DNA synthesis (IC50: 3 μM) in HER 14 cells stimulated by 50 ng/mL EGF, dose-dependently. Additionally, RG13022 inhibits growth stimulated by insulin, insulin-like growth factor I, insulin-like growth factor II, or transforming growth factor alpha. It completely blocks estrogen-stimulated phosphorylation of the EGF receptor and estrogen-induced cell proliferation, indicating that functioning TK pathways are essential for estrogen action.
In vivo	RG13022 suppresses tumor growth and extends the lifespan of tumor-bearing nude mice.
Cell Research	40 mM stock solutions of RG13022 is made in 100% DMSO and diluted with the culture medium before addition to the cells. MH-85 cells and HER 14 cells are plated in culture medium in the presence or absence of increasing concentrations of RG-13022 or RG-14620 for 10 days. At the end of culture, the cells are fixed with 4% (v/v) formaldehyde and stained with hematoxylin. Numbers of colonies including more than 20 cells in each well are counted under the microscope[1].

Solubility Information

Solubility	DMSO: 50 mg/mL (187.77 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 2 mg/mL (7.51 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.7553 mL	18.7765 mL	37.553 mL
5 mM	0.7511 mL	3.7553 mL	7.5106 mL
10 mM	0.3755 mL	1.8777 mL	3.7553 mL
50 mM	0.0751 mL	0.3755 mL	0.7511 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

Yoneda T, et al. The antiproliferative effects of tyrosine kinase inhibitors tyrphostins on a human squamous cell carcinoma in vitro and in nude mice. Cancer Res. 1991 Aug 15;51(16):4430-5.
Nguyen D J M, Theodoropoulos G, Li Y Y, et al. Targeting the kynurenine pathway for the treatment of cisplatin resistant lung cancer. Molecular Cancer Research. 2019: molcanres. 0239.2019
Reddy KB, et al. Inhibition of breast cancer cell growth in vitro by a tyrosine kinase inhibitor. Cancer Res. 1992 Jul 1; 52(13):3636-41.
Nguyen D J M, Theodoropoulos G, Li Y Y, et al. Targeting the kynurenine pathway for the treatment of cisplatin-resistant lung cancer[J]. Molecular Cancer Research. 2020, 18(1): 105-117.