

EGFR/HER2/DHFR-IN-1

Chemical Properties

CAS No. :

Formula: C₁₄H₁₁BrN₄O₂S

Molecular Weight: 379.23

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	EGFR/HER2/DHFR-IN-1 is a highly selective and potent anticancer compound targeting MCF-7 breast cancer cells, acting as a multi-inhibitor for EGFR/HER2 kinase and DHFR enzymes, with IC ₅₀ values of 0.153 μ M, 0.108 μ M, and 0.291 μ M, respectively. It induces cell cycle arrest at the G ₁ /S phase and apoptosis in cells [1].
Targets(IC ₅₀)	EGFR,Others
In vitro	EGFR/HER2-IN-7 (compound 39) exhibits broad-spectrum cytotoxic efficacy with an IC ₅₀ of 1.83 μ M against MCF-7 breast cancer cell lines, demonstrating strong anti-cancer properties [1]. It induces apoptosis and G ₁ /S phase cell cycle arrest in various cancer cell lines, including HepG2, MCF-7, HCT-116, PC-3, and HeLa, at 0-1 mM over 72 hours. The compound inhibits EGFR/HER2 kinase and DHFR, leading to S phase and G ₁ phase arrest, respectively. EGFR/HER2-IN-7 significantly reduces cancer cell growth with IC ₅₀ values of 3.48 μ M (HepG2), 1.83 μ M (MCF-7), 6.08 μ M (HCT-116), 12.74 μ M (PC-3), and 4.78 μ M (HeLa), highlighting its potential as a versatile oncology therapeutic agent [1].
In vivo	Caspase-3, a lysosomal enzyme pivotal for apoptosis, serves as a crucial biomarker for identifying apoptotic cells. Compound EGFR/HER2-IN-7, administered at a dosage of 10 mg/kg via intraperitoneal injection to Swiss albino female mice bearing breast cancer without lactating mammary glands, demonstrated significant anti-breast cancer efficacy over a duration of 20 days. The treatment not only reduced tumor volume by 76.5% and body weight by 17.4% but also notably increased Caspase-3 immunoexpression, with a Caspase-3 score of 1.33, underscoring its potential as a therapeutic agent against breast cancer.

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.6369 mL	13.1846 mL	26.3692 mL
5 mM	0.5274 mL	2.6369 mL	5.2738 mL
10 mM	0.2637 mL	1.3185 mL	2.6369 mL
50 mM	0.0527 mL	0.2637 mL	0.5274 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.

Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins

This product is for Research Use Only · Not for Human or Veterinary or Therapeutic Use

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