HSP70-IN-1

Cat. No.: HY-12622

CAS No.: 1268273-90-0

Molecular Formula: $C_{24}H_{28}N_6O_2S$

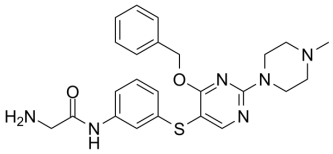
Molecular Weight: 464.58

Target: HSP

Pathway: Cell Cycle/DNA Damage; Metabolic Enzyme/Protease

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	2 years
	-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : 50 mg/mL (107.62 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.1525 mL	10.7624 mL	21.5248 mL
	5 mM	0.4305 mL	2.1525 mL	4.3050 mL
	10 mM	0.2152 mL	1.0762 mL	2.1525 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (5.38 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (5.38 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (5.38 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

HSP70-IN-1 is a heat shock protein (HSP) inhibitor; inhibits the growth of Kasumi-1 cells with an IC_{50} of 2.3 μM.

IC_{50} & Target

HSP70	Caspase-3/7
	1.9 μM (IC_{50}, MOLM13 cells)

In Vitro

The heat shock protein 70 (Hsp70) is a molecular chaperone which plays an important function in protein homeostasis as well as in cell signaling and survival. Hsp70 is frequently overexpressed in cancer, where the elevated expression is

furthermore believed to be a cause of or to lead to resistance to chemotherapy and other treatments. HSP70-IN-1 interferes with the formation of functional Hsp70-HOP-Hsp90 machinery by its ability to dose-dependently alter the megacomplex components and to destabilize an Hsp70-Hsp90 machinery client, Raf-1. In cells, the refolding of heat-denatured luciferase by endogenous as well as transfected Hsp70 is inhibited by HSP70-IN-1. HSP70-IN-1 also results in induction of apoptosis in cancer cells. Addition of HSP70-IN-1to cancer cells dose-dependently alters the formation of the Hsp70-HOP complex, a phenomenon associated with their destabilization and reduction in half-life[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Research Square Print. 2023 Mar 13.

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REFERENCES

[1]. Taldone T, et al. Heat shock protein 70 inhibitors. 2. 2,5'-thiodipyrimidines, 5-(phenylthio)pyrimidines, 2-(pyridin-3-ylthio)pyrimidines, and 3-(phenylthio)pyridines as reversible binders to an allosteric site on heat shock protein 70. J Med Chem. 2014 F

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