JG-98

Cat. No.: HY-117282

CAS No.: 1456551-16-8

Molecular Formula: $C_{24}H_{21}Cl_2N_3OS_3$

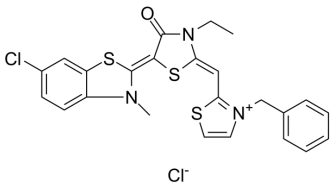
Molecular Weight: 534.54

Target: HSP; Apoptosis

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

Storage: 4°C, sealed storage, away from moisture

* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 5 mg/mL (9.35 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	1.8708 mL	9.3538 mL	18.7077 mL
	5 mM	0.3742 mL	1.8708 mL	3.7415 mL
	10 mM	---	---	---

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

BIOLOGICAL ACTIVITY

Description

JG-98, an allosteric heat shock protein 70 (Hsp70) inhibitor, which binds tightly to a conserved site on Hsp70 and disrupts the Hsp70-Bag3 interaction. JG-98 shows anti-cancer activities affecting both cancer cells and tumor-associated macrophages[1][2][3].

IC_{50} & Target

Heat shock protein 70[1]

In Vitro

JG-98 (30 nM-30 μM; 72 hours) has antiproliferative activity across a range of cell lines with the EC_{50}s between ~0.3 and 4 μM [2].

JG-98 (10 μM; 48 hours) activates apoptotic mediators (cleavage of caspase-3 and PARP) in MDA-MB-231 cells[1].

JG-98 destabilizes FoxM1 and relieves suppression of downstream effectors, including p21 and p27[2].

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

Cell Proliferation Assay[2]

Cell Line:	MCF-7, MDA-MB-231, A375, MeWo, HeLa, HT-29, SKOV3, Jurkat, mouse embryonic fibroblasts (MEF), MM1.R, INA6, RPMI-8226, JJN-3, U266, NCI-H929, L363, MM1.S, KMS11, LP-1, AMO-1, OPM1, OPM2 cells

Concentration:	30 nM-30 μM
Incubation Time:	72 hours
Result:	Active against all of the lines tested, and the EC_{50}s were variable (between ~0.3 μM and 4 μM). Normal MEFs and OPM1 and OPM2 were relatively less sensitive.

Western Blot Analysis[1]

Cell Line:	MDA-MB-231 cells
Concentration:	10 μM
Incubation Time:	48 hours
Result:	Incudes apoptotic mediators cleavage of caspase 3 and PARP.

In Vivo

JG-98 (3 mg/kg; i.p.; on days 0, 2, and 4) suppresses tumor growth in xenograft models bearing MCF7 and HeLa cells[2].

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

Animal Model:	6-week-old NCR mice (xenografts of MCF7 and HeLa cells)[2]
Dosage:	3 mg/kg
Administration:	Intraperitoneal injection; on days 0, 2, and 4
Result:	Limited tumor growth, but somewhat less effectively.

CUSTOMER VALIDATION

- J Virol. 2022 Dec 15;e0126122.
- J Cell Biochem. 2021 Sep 6.
- Sci Rep. 2019 Oct 7;9(1):14394.
- University of Groningen. Department of Medical Microbiology and Infection Prevention. 2021 May.

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REFERENCES

[1]. Li X, et al. Analogs of the Allosteric Heat Shock Protein 70 (Hsp70) Inhibitor, MKT-077, as Anti-Cancer Agents. ACS Med Chem Lett. 2013 Nov 14;4(11).

[2]. Li X, et al. Validation of the Hsp70-Bag3 protein-protein interaction as a potential therapeutic target in cancer. Mol Cancer Ther. 2015 Mar;14(3):642-8.

[3]. Yaglom JA, et al. Cancer cell responses to Hsp70 inhibitor JG-98: Comparison with Hsp90 inhibitors and findingsynergistic drug combinations. Sci Rep. 2018 Feb 14;8(1):3010.

Caution: Product has not been fully validated for medical applications. For research use only.

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