Geldanamycin Inhibitor

Catalog# SIH-111A/B

Size: 1mg/5mg

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Product	**Geldanamycin**
Formula	**$C_{29}H_{40}N_2O_9$**
MW	**560.6**
Source/Host	**Produced by fermentation**
Purity	**›95%**
Solubility	**Slightly soluble in methanol, chloroform or DMSO (10mg/mL); insoluble in water**
Appearance	**Yellow solid**
Storage and stability	**-20°C; 1 year+; shipped ambient** **Protect from light.**

Scientific Background

Geldanamycin is a benzoquinoid ansamycin produced by *Streptomyces hygroscopicus*. It binds specifically to heat shock protein HSP90 and downregulates target proteins including tyrosine kinases, steroid receptors, transcription factors and cell cycle regulatory kinases (1,2). It induces the inactivation, destabilization and eventual degradation of HIF-1α (3).
It is also an inhibitor of $pp60^{src}$ tyrosine kinase and of c-*myc* gene expression in murine lymphoblastoma cells. It inhibits the transforming activity of abl, erbB, fps, src, and yes (4). Geldanamycin is capable of destabilizing several oncogene and proto-oncogene products; it is a potent inhibitor of the nuclear hormone receptor family (5). It protects against α-synuclein toxicity to dopaminergic neurons in Drosophila, and destabilizes mutant p53 protein from a number of breast, leukemic, and prostate cell lines (6). Inhibits basal and hypoxia-induced expression of c-Jun (IC_{50}=75nM) and abolishes hypoxia-induced increase in c-Jun N-terminal kinase (JNK) activity. Inhibits telomerase activity through inhibition of HSP90, a chaperone required for the assembly and activation of telomerase in human cells (6). It is ~10-fold more potent than herbimycin A.

Selected References

1. 1. Whitesell L., *et al*. (1994) *Proc. Natl. Acad. Sci*. USA
2. 91:8324.
3. 2. Neckers L. (2002) *Trends Mol. Med*. 8: S55.
4. 3. Mabjeesh N.J., *et al.* (2002) *Cancer Res*. 62: 2478.
5. 4. Chavany C., *et al.* 1996) *Amer. Society Biochem Mol*
6. *Bio.* 9: 4974-4977.
5. Villa R., *et al*. (2003) *Carcinogenesis*. 24(5): 851-9.
6. Yamaki H., Iguchi-Ariga S.M., and Ariga H. (1989*) J Antibiot (Tokyo)* 42(4): 604-10.

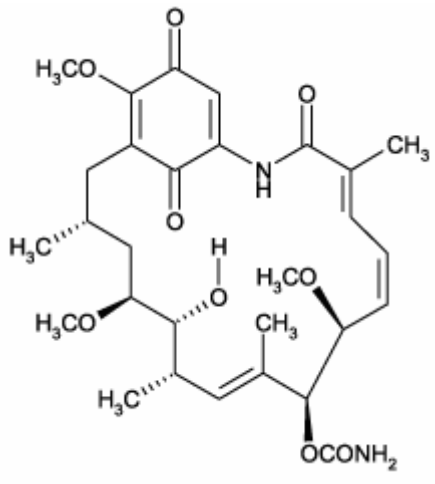

Figure 1: Structure of Geldanamycin

Material Safety Data Sheet

This product is for *in vitro* research use only and is not intended for use in humans or animals

The below information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. StressMarq shall not be held liable for any damage resulting from handling or from contact with the above product. See the Technical Specification, Packing Slip, Invoice, and Product Catalogue for additional terms and conditions of sale.

Hazardous Ingredients

The physical, chemical and toxicological properties of these components have not been fully investigated. It is recommended that all laboratory personnel follow standard laboratory safety procedures when handling this product. Safety procedures should include wearing OSHA approved safety glasses, gloves and protective clothing. Direct physical contact with this product should be avoided.

Known Hazardous Components	CAS Number	Percent
None		

Physical Data

This product consists of powder shipped at ambient temperatures. The physical properties of this product have not been investigated thoroughly. CAS number 30562-34-6, Chemical Class: Macrolide

Fire and Explosion Hazard and Reactivity Data

NOT APPLICABLE

Toxicological Properties

May be harmful by inhalation, ingestion, or skin absorption. The toxicological properties of this product have not been investigated thoroughly. Exercise due caution.

Preventative Measures

Wear chemical safety goggles and compatible chemical-resistant gloves. Avoid inhalation, contact with eyes, skin or clothing.

Spill and Leak Procedures

Observe all federal, state and local environmental regulations.

- Wear protective equipment.
- Absorb on sand or vermiculite and place in closed containers for disposal.
- Dispose or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

First Aid Measures

- If swallowed, wash out mouth with water, provided person is conscious. Call a physician.
- In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. If a rash or other irritation develops, call a physician.
- If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.
- In case of eye contact, flush with copious amounts of water for at least 15 minutes while separating the eyelids with fingers. Call a physician.

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