Certificate of Analysis

Product Name: **Echinomycin** **Catalog No.: 5520** **Batch No.: 7**

CAS Number: 512-64-1

IUPAC Name: *N*-(2-Quinoxalinylcarbonyl)-*O*-[*N*-(2-quinoxalinylcarbonyl)-D-seryl-L-alanyl-3-mercapto-*N*,*S*-dimethylcysteinyl-*N*-methyl-L-valyl]-D-seryl-L-alanyl-*N*-methylcysteinyl-*N*-methyl-L-valine-(81)-lactone-cyclic (37)-thioether

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: $C_{51}H_{64}N_{12}O_{12}S_2$

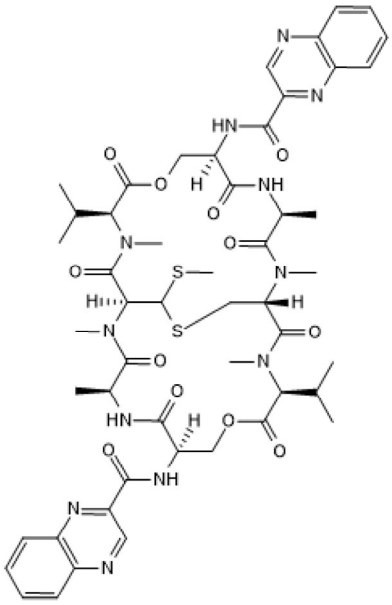
Batch Molecular Weight: 1101.26

Physical Appearance: White solid

Solubility: DMSO to 5 mg/ml

Storage: Store at -20°C

Batch Molecular Structure:



2. ANALYTICAL DATA

HPLC: Shows 99.2% purity

Mass Spectrum: Consistent with structure

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Description:

Echinomycin is a highly potent and selective HIF-1α inhibitor (IC_{50} = 29.4 pM). Selectively inhibits HIF-1 binding to the VEGF promoter without affecting the binding of AP-1 or NF-κB. Inhibits colony formation of cancer stem cells (CSC) with a 100-fold selectivity over normal hematopoietic progenitor cells. Eradicates mouse lymphomas and human AML xenografts by eliminating CSCs.

Physical and Chemical Properties:

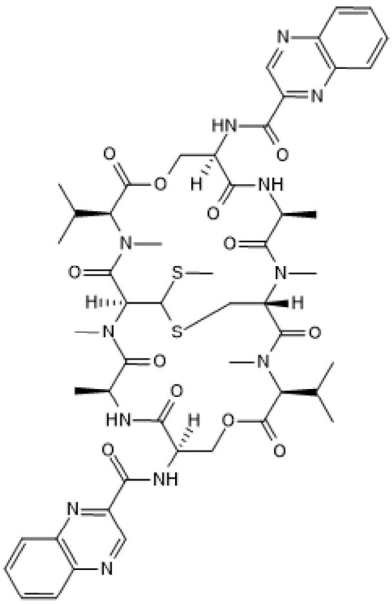
Batch Molecular Formula: $C_{51}H_{64}N_{12}O_{12}S_2$

Batch Molecular Weight: 1101.26

Physical Appearance: White solid

Minimum Purity: ≥98%

Batch Molecular Structure:



Storage: Store at -20°C

Solubility & Usage Info:

DMSO to 5 mg/ml

This product is supplied in lyophilized form. It may appear as a solid, gel or film and be very hard to visualize. Solutions should be made by adding solvent directly to the vial. The vial should then be vortexed vigorously to ensure the product has completely dissolved.

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. *Unless contradicted by product-specific protocols or instructions, our standard recommendations apply:

SOLIDS: Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

SOLUTIONS: We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

References:

Kwon *et al* (2011) Physical and functional interactions between Runx2 and HIF-1α induce vascular endothelial growth factor gene expression. J.Cell.Biochem. ***112*** 3582. PMID: 21793044.

Wang *et al* (2011) Targeting HIF1α eliminates cancer stem cells in hematological malignancies. Cell Stem Cell ***8*** 399. PMID: 21474104.

Kong *et al* (2005) Echinomycin, a small-molecule inhibitor of hypoxia-inducible factor-1 DNA-binding activity. Cancer Res. ***65*** 9047. PMID: 16204079.