Certificate of Analysis

Product Name: **Gliotoxin** **Catalog No.: 2637** **Batch No.: 3**

CAS Number: 67-99-2

IUPAC Name: (3*R*,5a*S*,6*S*,10a*R*)-2,3,5a,6-Tetrahydro-6-hydroxy-3-(hydroxymethyl)-2-methyl-10*H*-3,10a-epidithiopyrazino[1,2-*a*] indole-1,4-dione

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: $C_{13}H_{14}N_2O_4S_2$

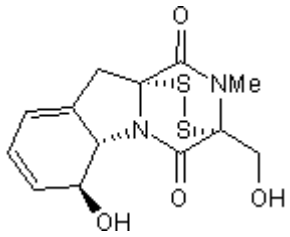
Batch Molecular Weight: 326.38

Physical Appearance: White lyophilised solid

Solubility: Soluble in DMSO
Soluble in ethanol

Storage: Desiccate at -20°C

Batch Molecular Structure:



2. ANALYTICAL DATA

Melting Point: At 204°C

HPLC: Shows 99% purity

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Description:

Immunosuppressive agent; blocks phagocytosis, cytokine production and proliferation of T and B cells. Non-competitively inhibits chymotrypsin-like activity of 20S proteasome; prevents degradation of IκBα, an endogenous blocker of NF-κB. Also inhibits farnesyltransferase and geranylgeranyltransferase I (IC_{50} values are 80 and 17 μM respectively) and displays antitumor activity against breast cancer in vivo.

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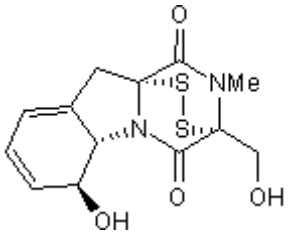

Storage: Desiccate at -20°C

Solubility & Usage Info:

Soluble in DMSO
Soluble in ethanol

This product is supplied as a lyophilized solid and may 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. Our standard recommendations are:

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:

Waring and Beaver (1996) Gliotoxin and related epipolythiodioxopiperazines. Gen.Pharmacol. ***27*** 1311. PMID: 9304400.

Fitzpatrick *et al* (2000) *In vitro* and *in vivo* effects of gliotoxin, a fungal metabolite: efficacy against dextran sodium sulfate-induced colitis in rats. Dig.Dis.Sci. ***45*** 2327. PMID: 11258552.

Vigushin *et al* (2004) Gliotoxin is a dual inhibitor of farnesyltransferase and geranylgeranyltransferase I with antitumour activity against breast cancer in vivo. Med.Oncol. ***21*** 21. PMID: 15034210.