

Product Name: Lactacystin

Catalog No.: 2267

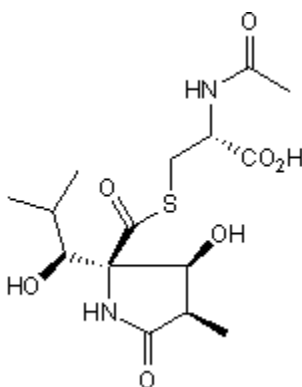
Batch No.: 4

CAS Number: 133343-34-7

IUPAC Name: (2*R*,3*S*,4*R*)-3-Hydroxy-2-[(1*S*)-1-hydroxy-2-methylpropyl]-4-methyl-5-oxo-2-pyrrolidinecarboxy-*N*-acetyl-L-cysteine thioester

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₁₅H₂₄N₂O₇S
Batch Molecular Weight: 376.42
Physical Appearance: White solid
Solubility: water to 10 mM
Storage: Desiccate at -20°C
Batch Molecular Structure:



2. ANALYTICAL DATA

¹H NMR: Consistent with structure
Mass Spectrum: Consistent with structure

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

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Description:

A cell-permeable, potent and selective proteasome inhibitor. A Streptomyces metabolite that is thought to bind irreversibly to the active site N-terminal threonine residue of the catalytic β -subunit of the 20S proteasome, thereby inhibiting its chymotrypsin and trypsin-like activities. Induces neurite outgrowth in Neuro 2a neuroblastoma cells and has been reported to induce apoptosis in human monoblast U937 cells. Also inhibits NF- κ B activation (IC_{50} = 10 μ M).

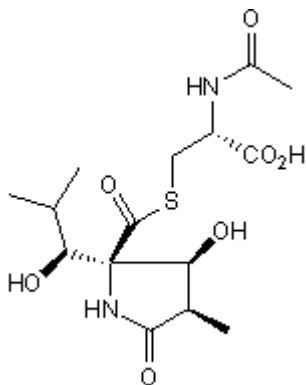
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References:

Omura *et al* (1991) Lactacystin, a novel microbial metabolite, induces neuritogenesis of neuroblastoma cells. *J.Antibiot.* **44** 113. PMID: 1848215.

Fenteany *et al* (1995) Inhibition of proteasome activities and subunit-specific amino-terminal threonine modification by lactacystin. *Science* **268** 726. PMID: 7732382.

Bellas *et al* (1997) Inhibition of NF- κ B activity induces apoptosis in murine hepatocytes. *Am.J.Pathol.* **151** 891. PMID: 9327720.

Storage: Desiccate at -20°C

Solubility & Usage Info:

water to 10 mM

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.

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