Print Date: Nov 12th 2018

Certificate of Analysis

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Product Name: **Tautomycetin** **Catalog No.: 2305** **Batch No.: 2**

CAS Number: 119757-73-2

IUPAC Name: (1*R*,2*S*,3*R*,6*S*,7*S*,10*S*,12*R*,15*E*,*βR*,3*R*)-16-Ethyl-3,7-dihydroxy-1,2,6,10,12-pentamethyl-5,14-dioxo-15,17-octadecadienyl 2,5-dihydro-β-hydroxy-4-methyl-2,5-dioxo-3-furanpropanoic acid ester

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: $C_{33}H_{50}O_{10}$

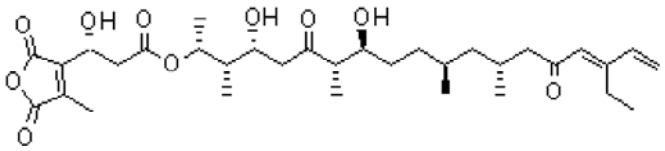
Batch Molecular Weight: 606.75

Physical Appearance: Colourless liquid

Solubility: Soluble in DMSO (supplied pre-dissolved in DMSO, 10mg/ml)

Storage: Desiccate at -20°C

Batch Molecular Structure:



2. ANALYTICAL DATA

HPLC: Shows 97.8% purity

Mass Spectrum: Consistent with structure

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Description:

Selective inhibitor of protein phosphatase (PP)1 (IC_{50} values are 1.6 and 62 nM for PP1 and PP2 respectively). Reduces PDGF-induced vascular smooth muscle cell and mesangial cell proliferation without affecting fibronectin secretion and cellular kinase activation in vivo. Immunosuppressive agent; inhibits proliferation and induces apoptosis in activated T cells.

Physical and Chemical Properties:

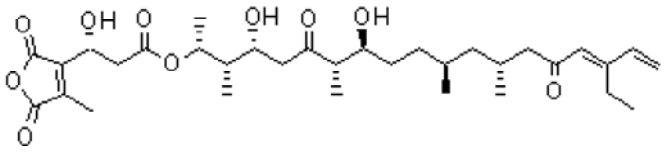
Batch Molecular Formula: $C_{33}H_{50}O_{10}$

Batch Molecular Weight: 606.75

Physical Appearance: Colourless liquid

Minimum Purity: >95%

Batch Molecular Structure:



Storage: Desiccate at -20°C. This product is packaged under an inert atmosphere.

CAUTION - This product is light sensitive and we recommend that the solid material and any solutions obtained are protected from exposure to light.

Solubility & Usage Info:

Soluble in DMSO (supplied pre-dissolved in DMSO, 10mg/ml)

Tautomycetin exists in solution as an equilibrium between the 2,3-dialkylmaleic anhydride and the corresponding dicarboxylic acid as reported by Isono *et al* in J. Antibiotics 43, 890-896, (1990). This product 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:

Kim *et al* (2005) Effects of tautomycetin on proliferation and fibronectin secretion in vascular smooth muscle cells and glomerular mesangial cells. Transplant Proc. ***37*** 1959. PMID: 15919517.

Shim *et al* (2002) Immunosuppressive effects of tautomycetin *in vivo* and *in vitro* via T cell-specific apoptosis induction. Proc.Natl.Acad.Sci.USA. ***99*** 10617. PMID: 12149481.

Mitsuhashi *et al* (2001) Tautomycetin is a novel and specific inhibitor of serine/threonine protein phosphatase type 1, PP1. Biochem.Biophys.Res.Comm. ***287*** 328. PMID: 11554729.