

**Product Name:** Rapamycin

**Catalog No.:** 1292

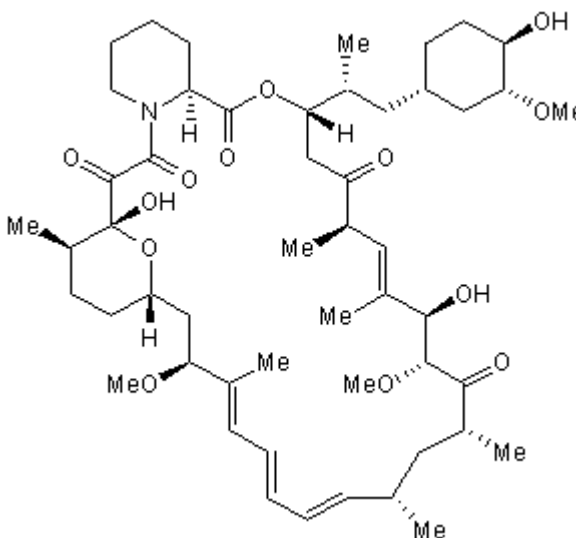
**Batch No.:** 8

**CAS Number:** 53123-88-9

**IUPAC Name:** (3*S*,6*R*,7*E*,9*R*,10*R*,12*R*,14*S*,15*E*,17*E*,19*E*,21*S*,23*S*,26*R*,27*R*,34*aS*)-9,10,12,13,14,21,22,23,24,25,26,27,32,33,34,34*a*-Hexadecahydro-9,27-dihydroxy-3-[(1*R*)-2-[(1*S*,3*R*,4*R*)-4-hydroxy-3-methoxycyclohexyl]-1-methylethyl]-10,21-dimethoxy-6,8,12,14,20,26-hexamethyl-23,27-epoxy-3*H*-pyrido[2,1-*c*][1,4]oxaazacyclohentriacontine-1,5,11,28,29(4*H*,6*H*,31*H*)-pentone

## 1. PHYSICAL AND CHEMICAL PROPERTIES

**Batch Molecular Formula:** C<sub>51</sub>H<sub>79</sub>NO<sub>13</sub>  
**Batch Molecular Weight:** 914.18  
**Physical Appearance:** White solid  
**Solubility:** ethanol to 20 mM  
DMSO to 50 mM  
**Storage:** Desiccate at -20°C  
**Batch Molecular Structure:**



## 2. ANALYTICAL DATA

**HPLC:** Shows 98.2% purity  
**Mass Spectrum:** Consistent with structure

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

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**USA & CANADA** Tel: (800) 343-7475 **EUROPE** Tel: +44 (0)1235 529449 **CHINA** Tel: +86 (21) 52380373  
www.RnDSystems.com

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**Description:**

Antifungal and immunosuppressant. Specific inhibitor of mTOR (mammalian target of Rapamycin). Complexes with FKBP-12 and binds mTOR inhibiting its activity. Inhibits interleukin-2-induced phosphorylation and activation of p70 S6 kinase. Induces autophagy in yeast and mammalian cell lines.

**Physical and Chemical Properties:**

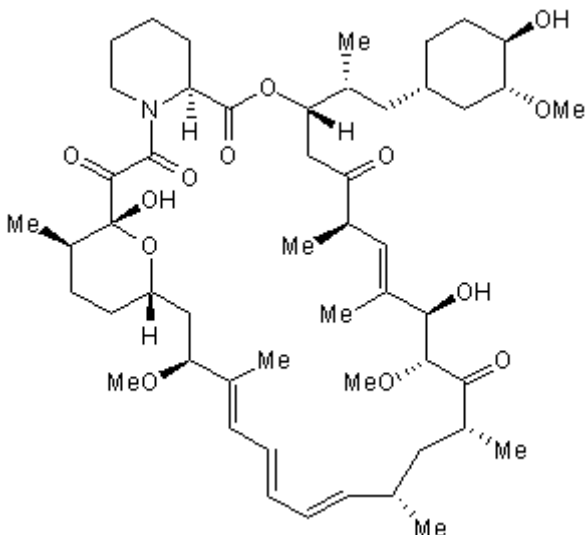
Batch Molecular Formula: C<sub>51</sub>H<sub>79</sub>NO<sub>13</sub>

Batch Molecular Weight: 914.18

Physical Appearance: White solid

**Minimum Purity:** >98%

**Batch Molecular Structure:**



**Storage:** Desiccate at -20°C

**Solubility & Usage Info:**

ethanol to 20 mM

DMSO to 50 mM

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:**

**Kuo *et al*** (1992) Rapamycin selectively inhibits interleukin-2 activation of p70 S6 kinase. *Nature* **358** 70. PMID: 1614535.

**Huang *et al*** (2003) Rapamycins: mechanism of action and cellular resistance. *Cancer Biol. Ther.* **2** 221. PMID: 12878853.

**Kobayashi *et al*** (2007) Rapamycin, a specific inhibitor of the mammalian target of rapamycin, suppresses lymphangiogenesis and lymphatic metastasis. *Cancer Sci.* **98** 726. PMID: 17425689.

**Fleming *et al*** (2011) Chemical modulators of autophagy as biological probes and potential therapeutics. **79**. PMID: 21164513.

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