

PRODUCT INFORMATION



Rapamycin

Item No. 13346

CAS Registry No.: 53123-88-9

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

Synonym: Sirolimus

MF: C₅₁H₇₉NO₁₃

FW: 914.2

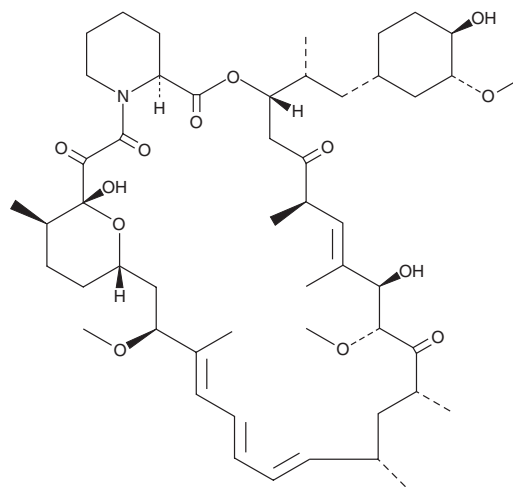
Purity: ≥95%

UV/Vis.: λ_{max}: 268, 278, 289 nm

Supplied as: A crystalline solid

Storage: -20°C

Stability: ≥2 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Rapamycin is supplied as a crystalline solid. A stock solution may be made by dissolving the rapamycin in an organic solvent purged with an inert gas. Solvents such as ethanol, DMSO, and dimethyl formamide (DMF) purged with an inert gas can be used. The solubility of rapamycin in ethanol is approximately 0.25 mg/ml and approximately 10 mg/ml in DMSO and DMF.

If aqueous stock solutions are required for biological experiments, they can best be prepared by diluting the organic solvent into aqueous buffers or isotonic saline. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. We do not recommend storing the aqueous solution for more than one day.

Description

Rapamycin is an allosteric inhibitor of the mammalian target of rapamycin (mTOR) complex 1 (mTORC1).¹ It interacts with FKBP prolyl isomerase 1A (FKBP12) to form a complex that binds to and inhibits the kinase activity of mTORC1. Rapamycin inhibits growth of Rh1 and Rh30 rhabdomyosarcoma cells in serum-free medium, with 50% inhibition observed at concentrations of 0.1 and 0.5 ng/ml, respectively, and increases apoptosis in these cells at 100 ng/ml.² It also induces autophagy in a variety of cell types.¹ Rapamycin inhibits IL-2-induced proliferation of IL-2-dependent T cells by 50% when used at concentrations less than 5 pM.³ Formulations containing rapamycin have been used as immunosuppressive agents in the prevention of organ transplant rejection.

References

1. Kim, Y.C. and Guan, K.-L. *J. Clin. Invest.* **125**(1), 25-32 (2015).
2. Hosoi, H., Dilling, M.B., Shikata, T., et al. *Cancer Res.* **59**(4), 886-894 (1999).
3. Kay, J.E., Kromwel, L., Doe, S.E.A., et al. *Immunology* **72**(4), 544-549 (1991).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD

ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897

[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM

WWW.CAYMANCHEM.COM