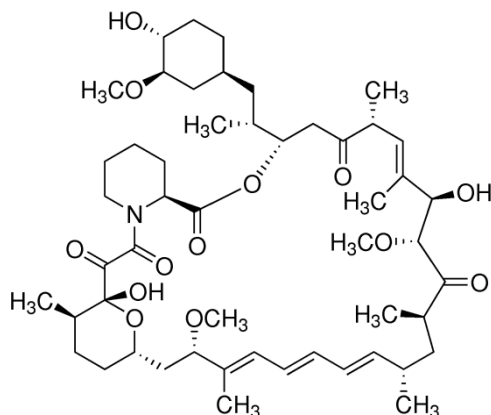


Product Information

Rapamycin Ready Made Solution from *Streptomyces hygroscopicus*

Catalog Number **R8781**
Storage Temperature $-20\text{ }^{\circ}\text{C}$

CAS RN 53123-88-9
Synonyms: Antibiotic AY 22989; NSC 2260804;
Sirolimus; Rapamune.



Product Description

Molecular formula: $\text{C}_{51}\text{H}_{79}\text{NO}_{13}$
Molecular weight: 914.17

Rapamycin is a macrocyclic triene antibiotic synthesized by *Streptomyces hygroscopicus*. It was originally isolated as an antifungal agent,^{1,2} but was found to possess antitumor and potentially immunosuppressive activities.^{3,4} Rapamycin forms a complex with the immunophilin FK506 binding protein 12 (FKBP12) that binds to and inhibits the molecular target of rapamycin (mTOR). mTOR is a member of the phosphoinositide kinase-related kinase (PIKK) family that enhances cellular proliferation via the phosphoinositol 3-kinase/Akt signaling pathway.⁵ Effectors of mTOR include 4EBP1 and S6K1.⁶ Inhibition of this pathway by rapamycin blocks downstream elements and results in cell cycle arrest in G_1 .^{7,8}

Reagent

The product is supplied as a 2.5 mg/ml (2.74 mM), 0.2 μm filtered, dimethyl sulfoxide (DMSO) solution.

Purity: $\geq 95\%$ (HPLC)

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

Store the product sealed at $-20\text{ }^{\circ}\text{C}$. Under these conditions the product is stable for at least 2 years.

References

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4. Sehgal, S.N., and Bansbach, C.C., *Ann. N.Y. Acad. Sci.*, **685**, 58-67 (1993).
5. Sabatini, D.M., et al., *Cell*, **78**, 35-43 (1994).
6. Shamji, A.F., et al., *Mol. Cell*, **12**, 271-280 (2003).
7. Mita, M.M., et al., *Cancer Biol. Ther.*, **2**, S169-S177 (2003).
8. Brown, E.J., et al., *Nature*, **369**, 756-758 (1994).

VNC,DWF,MAM 12/08-1

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