Rapamycin

Antibiotic; mTOR pathway inhibitor; Inhibits FKBP-12

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<th>Catalog #</th>
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Product Description

Rapamycin is a macroline antibiotic and immunosuppressive compound that inhibits mammalian target of rapamycin (mTOR) signaling. It acts through formation of a complex with cytosolic FK-binding protein 12 (FKBP-12), which directly binds to mTOR complex 1 (mTORC1). Its immunosuppressive effects are mediated through inhibition of IL-2 signaling that is critical for T cell proliferation and activation (Gibbons et al.; Kay et al.). Rapamycin shows antifungal activity against Candida albicans and other fungi (Vézina et al.).

Structure:

![Rapamycin Structure](image)

Properties

Physical Appearance: A crystalline solid

Storage: Product stable at -20°C as supplied. Protect from prolonged exposure to light. Stable as supplied for 12 months from date of receipt.

Solubility:

- DMSO ≤ 10 mM
- Absolute ethanol ≤ 0.25 mM

For example, to prepare a 5 mM stock solution in DMSO, resuspend 1 mg in 219 μL of DMSO.

Prepare stock solution fresh before use. Information regarding stability of small molecules in solution has rarely been reported, however, as a general guide we recommend storage in DMSO at -20°C. Aliquot into working volumes to avoid repeated freeze-thaw cycles. The effect of storage of stock solution on compound performance should be tested for each application.

Compound has low solubility in aqueous media. For use as a cell culture supplement, stock solution should be diluted into culture medium immediately before use. Avoid final DMSO concentration above 0.1% due to potential cell toxicity.
Published Applications

CANCER RESEARCH
- Induces autophagy in malignant glioma cells (Takeuchi et al.).

References


Related Small Molecules

For a complete list of small molecules available from STEMCELL Technologies, visit www.stemcell.com/smallmolecules or contact us at techsupport@stemcell.com.

This product is hazardous. Please refer to the Safety Data Sheet (SDS).