Rapamycin (Sirolimus)

**Cat. No.:** A8167  
**CAS No.:** 53123-88-9  
**Formula:** C51H79NO13  
**M.Wt:** 914.18  
**Synonyms:** Sirolimus, (-)-Rapamycin, AY-22989, WY-090217, Antibiotic AY22989  
**Target:** PI3K/Akt/mTOR Signaling  
**Pathway:** mTOR  
**Storage:** Desiccate at -20° C

### Solvent & Solubility

<table>
<thead>
<tr>
<th>Preparing Stock Solutions</th>
<th>1mg</th>
<th>5mg</th>
<th>10mg</th>
</tr>
</thead>
<tbody>
<tr>
<td>In Vitro</td>
<td></td>
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<tr>
<td>DMSO</td>
<td>1.0939 mL</td>
<td>5.4694 mL</td>
<td>10.9388 mL</td>
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<tr>
<td>EtOH with ultrasonic</td>
<td>0.2188 mL</td>
<td>1.0939 mL</td>
<td>2.1878 mL</td>
</tr>
</tbody>
</table>

≥45.7 mg/mL in DMSO; insoluble in H2O; ≥58.9 mg/mL in EtOH with ultrasonic

Please refer to the solubility information to select the appropriate solvent.

### Biological Activity

**Shortsummary**  
Original antifungal antibiotic

**IC₅₀ & Target**  
~0.1 nM (mTOR)

**Cell Viability Assay**

**Preparation method:**  
The solubility of this compound in DMSO is >10 mM. General tips for obtaining a higher concentration: Please warm the tube at 37 °C for 10 minutes and/or shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.
Reacting conditions: 10 ng/ml, 72h

Applications: Using cell proliferation, cell viability and flow cytometric apoptosis assays, we found that rapamycin potently not only suppressed proliferation but also induced the apoptosis of LECs in a dose-dependent manner under HGF administration. Further investigation of the underlying mechanism using siRNA transfection revealed that rapamycin could promote apoptosis of LECs via inhibiting HGF-induced phosphorylation of AKT/mTOR, ERK and JAK2/STAT3 signaling molecules. Moreover, the forced expression of AKT, ERK and STAT3 could induce a significant suppression of apoptosis in these cells after treatment of rapamycin.

<table>
<thead>
<tr>
<th>Animal experiment</th>
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<tbody>
<tr>
<td>Animal models:</td>
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<tr>
<td>Dosage form:</td>
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<tr>
<td>Applications:</td>
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Other notes: Please test the solubility of all compounds indoor, and the actual solubility may slightly differ with the theoretical value. This is caused by an experimental system error and it is normal.

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**Product Citations**

