Everolimus is an inhibitor of mammalian target of rapamycin (mTOR). It is a hydroxyethyl ether substituted derivative of Rapamycin with improved pharmacokinetic and pharmacodynamic properties. It inhibits both mTORC1 and mTORC2 complexes by binding to FK506 Binding Protein (FKBP-12), which then binds to mTOR, leading to complex destabilization and blocked kinase function (Zeng et al.; Lebwohl et al.; Sedrani et al.; Huang & Houghton).

**Molecular Name:** Everolimus  
**Alternative Names:** Afinitor™, Certican, NVP-RAD001, RAD001, SDZ-RAD, Xience, Zortress™  
**CAS Number:** 159351-69-6  
**Chemical Formula:** C_{53}H_{83}NO_{14}  
**Molecular Weight:** 958.2 g/mol  
**Purity:** ≥ 98%

**Chemical Name:** (1R,9S,12S,15R,16E,18R,19R,21R,23S,24E,26E,28E,30S,32S,35R)-1,18-Dihydroxy-12-((1R)-2-((1S,3R,4R)-4-(2-hydroxyethoxy)-3-methoxycyclohexyl)-1-methylethyl)-19,30-dimethoxy-15,17,21,23,29,35-hexamethyl-11,36-dioxa-4-azatricyclo(30.3.1.0(sup 4,9))hexatriacontane

**Physical Appearance:** A crystalline solid  
**Storage:** Product stable at -20°C as supplied. Protect from prolonged exposure to light. For product expiry date, please contact techsupport@stemcell.com.  
**Solubility:**  
- DMSO ≤ 10 mM  
- Absolute ethanol ≤ 10 mM  

For example, to prepare a 5 mM stock solution in DMSO, resuspend 10 mg in 2.09 mL 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

IMMUNOLOGY
- Acts as an immunosuppressive agent in the context of organ transplantation (Lebwohl et al.; Wullschleger et al.).

CANCER RESEARCH
- Inhibits cell proliferation, metabolism, and angiogenesis in a variety of cancers using in vitro and in vivo models (Zhu et al.; Lane et al.; O’Reilly et al.; Lebwohl et al.).

References


Related Small Molecules

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

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