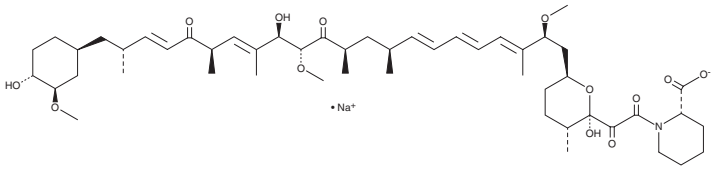
PRODUCT INFORMATION

Seco Rapamycin (sodium salt)

Item No. 16158

CAS Registry No.: 148554-65-8
Formal Name: [2R-[2α,2(S*),3α,6β[2S*,3E,5E,7E,9S*,11R*,13R*,14R*,15E,7R*,19E,21R*,22(1S*,3R*,4R*)]]]-1-[oxo[tetrahydro-2-hydroxy-6-[14-hydroxy-22-(4-hydroxy-3methoxycyclohexyl)-2,13-dimethoxy-3,9,11,15,17,21-hexamethyl-12,18-dioxo-3,5,7,15,19-docosapentaenyl]-3-methyl-2H-pyran-2-yl]acetyl]-2-piperidinecarboxylic acid, monosodium salt
MF: $C_{51}H_{78}NO_{13} \bullet Na$
FW: 936.2
Purity: ≥85%
UV/Vis.: λ_{max}: 277, 289 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



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

Laboratory Procedures

Seco rapamycin (sodium salt) is supplied as a crystalline solid. A stock solution may be made by dissolving the seco rapamycin (sodium salt) in the solvent of choice, which should be purged with an inert gas. Seco rapamycin (sodium salt) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of seco rapamycin (sodium salt) in ethanol and DMSO is approximately 25 mg/ml and approximately 30 mg/ml in DMF.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of seco rapamycin (sodium salt) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of seco rapamycin (sodium salt) in PBS (pH 7.2) is approximately 5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Rapamycin (Item No. 13346) is a natural macrolide immunosuppressant that activates mTORC1. Seco rapamycin (sodium salt) is a nonenzyme-dependent degradation product of rapamycin (Item No. 13346) resulting from ester hydration followed by dehydration.[1] It has less than 4% of the potency of rapamycin in a thymocyte proliferation assay.[1] Rapamycin quickly degrades to two ring-opened products, including seco rapamycin, in the cytoplasm or in homogenates of Caco-2 cells.[2] Like rapamycin, seco rapamycin is secreted from cells by P-glycoprotein and metabolized to a common dihydro species.[3] While seco rapamycin poorly activates mTOR, it mimics rapamycin in its ability to inhibit the proteasome.[4]

References

1. Wang, C.P., Chan, K.W., Schiksnis, R.A., *et al. Liq. Chromatogr.* **17(16)**, 3383-3392 (1994).
2. Paine, M.F., Leung, L.Y., Lim, H.K., *et al. Pharmacol. Exp. Ther.* **301(1)**, 174-186 (2002).
3. Paine, M.F., Leung, L.Y., and Watkins, P.B. *Ther. Drug Monit.* **26(5)**, 463-467 (2004).
4. Osmulski, P.A. and Gaczynska, M. *Mol. Pharmacol.* **84(1)**, 104-113 (2013).

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