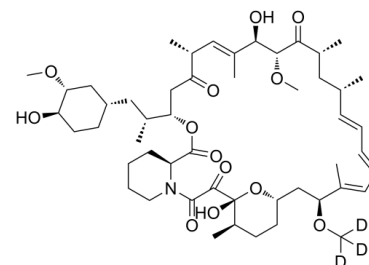


## Data Sheet

<b>Product Name:</b>	Rapamycin-d <sub>3</sub>
<b>Cat. No.:</b>	CS-0084530
<b>CAS No.:</b>	392711-19-2
<b>Molecular Formula:</b>	C <sub>51</sub> H <sub>76</sub> D <sub>3</sub> NO <sub>13</sub>
<b>Molecular Weight:</b>	917.19
<b>Target:</b>	Autophagy; FKBP; Isotope-Labeled Compounds; mTOR
<b>Pathway:</b>	Apoptosis; Autophagy; Cell Cycle/DNA Damage; Immunology/Inflammation; Others; PI3K/Akt/mTOR
<b>Solubility:</b>	Ethanol : 50mg/mL (ultrasonic);DMSO : 125mg/mL (ultrasonic);Ethanol : 50mg/mL (ultrasonic);DMSO : 125mg/mL (ultrasonic)



### BIOLOGICAL ACTIVITY:

Rapamycin-d<sub>3</sub> is the deuterium labeled Rapamycin. Rapamycin is a potent and specific **mTOR** inhibitor with an **IC<sub>50</sub>** of 0.1 nM in HEK293 cells. Rapamycin binds to FKBP12 and specifically acts as an allosteric inhibitor of **mTORC1**. Rapamycin is an **autophagy** activator, an immunosuppressant<sup>[1][2]</sup>. *In Vitro*: Stable heavy isotopes of hydrogen, carbon, and other elements have been incorporated into drug molecules, largely as tracers for quantitation during the drug development process. Deuteration has gained attention because of its potential to affect the pharmacokinetic and metabolic profiles of drugs.

### References:

- [1]. Edwards SR, et al. The rapamycin-binding domain of the protein kinase mammalian target of rapamycin is a destabilizing domain. J Biol Chem, 2007, 282(18), 13395-13401.
- [2]. Rangaraju S, et al. Rapamycin activates autophagy and improves myelination in explant cultures from neuropathic mice. J Neurosci. 2010 Aug 25;30(34):11388-97.

### CAIndexNames:

Rapamycin, 7-O-demethyl-7-O-(methyl-d<sub>3</sub>)- (9CI)

### SMILES:

O=C([C@@H]1O[C@@H](CC[C@H]1C)C[C@@H](/C(C)=C/C=C/C=C/[C@H](C2)C)OC([2H])([2H])([2H])O)C(N3[C@@H](CCCC3)C(O[C@@H](CC([C@@H](/C=C([C@H]([C@H](C[C@@H]2C)=O)OC)O)C)=O)[C@@H](C[C@@H]4CC[C@H]([C@@H](C4)OC)O)C)=O

**Caution: Product has not been fully validated for medical applications. For research use only.**

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