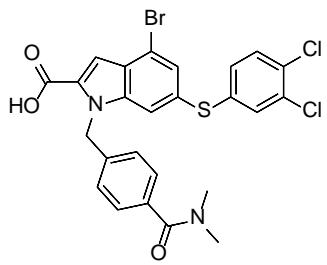


Product data sheet



MedKoo Cat#: 563945 Name: NR1 Rheb inhibitor CAS: 2216763-38-9 Chemical Formula: C ₂₅ H ₁₉ BrCl ₂ N ₂ O ₃ S Exact Mass: 575.9677 Molecular Weight: 578.302		
Product supplied as:	Powder	
Purity (by HPLC):	≥ 98%	
Shipping conditions	Ambient temperature	
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years. In solvent: -80°C 3 months; -20°C 2 weeks.	

1. Product description:

NR1 is a inhibitor of Rheb, selectively targeting mTORC1 signaling.

2. CoA, QC data, SDS, and handling instruction

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under “QC And Documents” section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMSO	50.0	86.46

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	1.73 mL	8.65 mL	17.29 mL
5 mM	0.35 mL	1.73 mL	3.46 mL
10 mM	0.17 mL	8.65 mL	1.73 mL
50 mM	0.04 mL	0.17 mL	0.35 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator

Please refer the product web page under section of “Calculator”

6. Recommended literature which reported protocols for in vitro and in vivo study

In vitro study

Mahoney SJ, Narayan S, Molz L, Berstler LA, Kang SA, Vlasuk GP, Saiah E. A small molecule inhibitor of Rheb selectively targets mTORC1 signaling. Nat Commun. 2018 Feb 7;9(1):548. doi: 10.1038/s41467-018-03035-z. PMID: 29416044; PMCID: PMC5803267.

In vivo study

Mahoney SJ, Narayan S, Molz L, Berstler LA, Kang SA, Vlasuk GP, Saiah E. A small molecule inhibitor of Rheb selectively targets mTORC1 signaling. Nat Commun. 2018 Feb 7;9(1):548. doi: 10.1038/s41467-018-03035-z. PMID: 29416044; PMCID: PMC5803267.

7. Bioactivity

Biological target:

Rheb inhibitor NR1 is a Rheb inhibitor with an IC₅₀ of 2.1 μM in the Rheb-IVK assay.

In vitro activity

This study reports the discovery of a small molecule (NR1) that binds Rheb in the switch II domain and selectively blocks mTORC1 signaling. NR1 potently inhibits mTORC1 driven phosphorylation of ribosomal protein S6 kinase beta-1 (S6K1) but does not inhibit phosphorylation of AKT or ERK. In contrast to rapamycin, NR1 does not cause inhibition of mTORC2 upon prolonged treatment.

Product data sheet



Reference: Nat Commun. 2018 Feb 7;9(1):548. <https://pubmed.ncbi.nlm.nih.gov/29416044/>

In vivo activity

This study carried out a pharmacodynamic (PD) study to evaluate the efficacy of NR1 at inhibiting mTORC1 signaling in vivo. Compared to the vehicle-treated group, the **NR1**-treated animals had significantly reduced mTORC1 activity in both kidney and skeletal muscle, clearly indicating downregulation of the pathway due to compound. In addition, there was a clear band shift for ^{T37/46}4E-BP1 in skeletal muscle, further confirming the activity of **NR1** on the mTORC1 pathway.

Reference: Nat Commun. 2018 Feb 7;9(1):548. <https://pubmed.ncbi.nlm.nih.gov/29416044/>

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.