

Product data sheet



MedKoo Cat#: 562948 Name: UNC3230 CAS#: 1031602-63-7 Chemical Formula: C ₁₇ H ₂₀ N ₄ O ₂ S Exact Mass: 344.1307 Molecular Weight: 344.43	
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:

UNC3230 is a selective inhibitor of lipid kinase PIP5K1C. It acts by lowering PIP2 levels in DRG neurons and attenuating hypersensitivity. UNC3230 lowered PIP2 levels in DRG neurons and attenuated hypersensitivity when administered intrathecally or into the hindpaw. PIP5K1C regulates PIP2-dependent nociceptive signaling and suggest that PIP5K1C is a therapeutic target for chronic pain.

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	30	87.10
DMF	30	87.10
Ethanol	0.2	0.58

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.90 mL	14.52 mL	29.03 mL
5 mM	0.58 mL	2.90 mL	5.81 mL
10 mM	0.29 mL	1.45 mL	2.90 mL
50 mM	0.06 mL	0.29 mL	0.58 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

Li L, Kołodziej T, Jafari N, Chen J, Zhu H, Rajfur Z, Huang C. Cdk5-mediated phosphorylation regulates phosphatidylinositol 4-phosphate 5-kinase type I γ 90 activity and cell invasion. *FASEB J.* 2019 Jan;33(1):631-642. doi: 10.1096/fj.201800296R. Epub 2018 Jul 24. PMID: 30040488; PMCID: PMC6355064.

In vivo study

Wright BD, Loo L, Street SE, Ma A, Taylor-Blake B, Stashko MA, Jin J, Janzen WP, Frye SV, Zylka MJ. The lipid kinase PIP5K1C regulates pain signaling and sensitization. *Neuron.* 2014 May 21;82(4):836-47. doi: 10.1016/j.neuron.2014.04.006. PMID: 24853942; PMCID: PMC4074510.

7. Bioactivity

Biological target:

UNC3230 is a selective inhibitor of lipid kinase PIP5K1C.

Product data sheet



In vitro activity

Furthermore, inhibition of PIPKI γ activity with the chemical inhibitor UNC3230 suppresses fibronectin secretion in a dose-dependent manner, whereas depletion of Cdk5 enhances fibronectin secretion. With total internal reflection fluorescence microscopy, it was found that secreted fibronectin appears as round dots, which colocalize with Tks5 and CD9 but not with Zyxin. These data suggest that Cdk5-mediated PIPKI γ 90 phosphorylation regulates cell invasion by controlling PIPKI γ 90 activity and fibronectin secretion. -Li, L., Kołodziej, T., Jafari, N., Chen, J., Zhu, H., Rajfur, Z., Huang, C. Cdk5-mediated phosphorylation regulates phosphatidylinositol 4-phosphate 5-kinase type I γ 90 activity and cell invasion.

Reference: Li L, Kołodziej T, Jafari N, Chen J, Zhu H, Rajfur Z, Huang C. Cdk5-mediated phosphorylation regulates phosphatidylinositol 4-phosphate 5-kinase type I γ 90 activity and cell invasion. *FASEB J.* 2019 Jan;33(1):631-642. doi: 10.1096/fj.201800296R. Epub 2018 Jul 24. PMID: 30040488; PMCID: PMC6355064.

In vivo activity

Here, phosphatidylinositol 4-phosphate 5 kinase type 1C (PIP5K1C) was found to be expressed at higher levels than any other PIP5K and, based on experiments with Pip5k1c(+/-) mice, generates at least half of all PIP2 in DRG neurons. Additionally, Pip5k1c haploinsufficiency reduces pronociceptive receptor signaling and TRPV1 sensitization in DRG neurons as well as thermal and mechanical hypersensitivity in mouse models of chronic pain. A small molecule inhibitor of PIP5K1C (UNC3230) was identified in a high-throughput screen. UNC3230 lowered PIP2 levels in DRG neurons and attenuated hypersensitivity when administered intrathecally or into the hindpaw. Our studies reveal that PIP5K1C regulates PIP2-dependent nociceptive signaling and suggest that PIP5K1C is a therapeutic target for chronic pain.

Reference: Wright BD, Loo L, Street SE, Ma A, Taylor-Blake B, Stashko MA, Jin J, Janzen WP, Frye SV, Zylka MJ. The lipid kinase PIP5K1C regulates pain signaling and sensitization. *Neuron.* 2014 May 21;82(4):836-47. doi: 10.1016/j.neuron.2014.04.006. PMID: 24853942; PMCID: PMC4074510.

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.