

Product data sheet



MedKoo Cat#: 530539 Name: ML-141 CAS: 71203-35-5 Chemical Formula: C ₂₂ H ₂₁ N ₃ O ₃ S Exact Mass: 407.1304 Molecular Weight: 407.488		
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:

ML-141, also known as CID2950007, is a Cdc42 inhibitor (EC₅₀ = 2.1 μM).

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
DMF	30.0	73.62
DMF:PBS (pH 7.2) (1:4)	0.2	0.49
DMSO	38.58	94.69

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.45 mL	12.27 mL	24.54 mL
5 mM	0.49 mL	2.45 mL	4.91 mL
10 mM	0.25 mL	1.23 mL	2.45 mL
50 mM	0.05 mL	0.25 mL	0.49 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

- Chen HY, Yang YM, Stevens BM, Noble M. Inhibition of redox/Fyn/c-Cbl pathway function by Cdc42 controls tumour initiation capacity and tamoxifen sensitivity in basal-like breast cancer cells. *EMBO Mol Med*. 2013 May;5(5):723-36. doi: 10.1002/emmm.201202140. Epub 2013 Apr 22. PMID: 23606532; PMCID: PMC3662315.
- Hong L, Kenney SR, Phillips GK, Simpson D, Schroeder CE, Nöth J, Romero E, Swanson S, Waller A, Strouse JJ, Carter M, Chigaev A, Ursu O, Oprea T, Hjelle B, Golden JE, Aubé J, Hudson LG, Buranda T, Sklar LA, Wandinger-Ness A. Characterization of a Cdc42 protein inhibitor and its use as a molecular probe. *J Biol Chem*. 2013 Mar 22;288(12):8531-8543. doi: 10.1074/jbc.M112.435941. Epub 2013 Feb 4. Erratum in: *J Biol Chem*. 2014 Mar 7;289(10):6837. PMID: 23382385; PMCID: PMC3605667.

In vivo study

- Du H, Zhou H, Sun Y, Zhai X, Chen Z, Wang Y, Xu Z. The Rho GTPase Cell Division Cycle 42 Regulates Stereocilia Development in Cochlear Hair Cells. *Front Cell Dev Biol*. 2021 Oct 22;9:765559. doi: 10.3389/fcell.2021.765559. PMID: 34746154; PMCID: PMC8570139.
- Hanin G, Shenhar-Tsarfaty S, Yayon N, Yau YH, Bennett ER, Sklan EH, Rao DC, Rankinen T, Bouchard C, Geifman-Shochat S, Shifman S, Greenberg DS, Soreq H. Competing targets of microRNA-608 affect anxiety and hypertension. *Hum Mol Genet*. 2014 Sep

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1;23(17):4569-80. doi: 10.1093/hmg/ddu170. Epub 2014 Apr 9. Erratum in: Hum Mol Genet. 2014 Dec 15;23(24):6694. Hoe, Yau Yin [corrected to Yau, Yin Hoe]. PMID: 24722204; PMCID: PMC4119407.

7. Bioactivity

Biological target:

ML141 (CID-2950007) is a potent, allosteric, selective and reversible non-competitive inhibitor of Cdc42 GTPase.

In vitro activity

This study reports here the characterization of a Cdc42-selective guanine nucleotide binding lead inhibitor (CID-2950007) that was identified by high throughput screening. Biochemical characterization showed that the compounds act as noncompetitive allosteric inhibitors. When tested in cellular assays, the lead compound inhibited Cdc42-related filopodia formation and cell migration. The lead compound was also used to clarify the involvement of Cdc42 in the Sin Nombre virus internalization and the signaling pathway of integrin VLA-4.

Reference: J Biol Chem. 2013 Mar 22;288(12):8531-8543. <https://pubmed.ncbi.nlm.nih.gov/23382385/>

In vivo activity

After 24 h, ML141-injected mice spent less time than saline-injected controls in the anxiogenic center of an open field, preferring its periphery (Fig. 6C and D, n = 7, Student's t-test: $P < 0.01$ in all cases). Parallel suppression of the conserved brain CDC42 activity by intracerebroventricular ML141 injection caused acute anxiety in mice.

Reference: Hum Mol Genet. 2014 Sep 1;23(17):4569-80. <https://pubmed.ncbi.nlm.nih.gov/24722204/>

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.