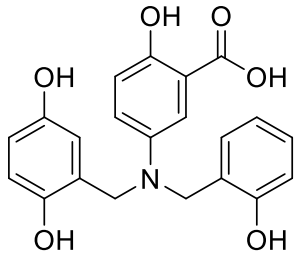
Product data sheet

MedKoo Cat#: 407367 Name: Lavendustin A CAS: 125697-92-9 Chemical Formula: $C_{21}H_{19}NO_6$ Exact Mass: 381.1212 Molecular Weight: 381.384	
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:
Lavendustin A, also known as RG 14355, is a potent, cell-permeable inhibitor of epidermal growth factor receptor (EGFR) tyrosine kinase (IC_{50} = 11 nM). Lavendustin A shows cytotoxic effects on tumor cell lines. Lavendustin A enhances axon elongation in VHL gene-transfected neural stem cells.

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	20.0	52.44
DMF:PBS (pH 7.2) (1:1)	0.5	1.31
DMSO	20.0	52.44
Ethanol	10.0	26.22

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.62 mL	13.11 mL	26.22 mL
5 mM	0.52 mL	2.52 mL	5.24 mL
10 mM	0.26 mL	1.31 mL	2.62 mL
50 mM	0.05 mL	0.26 mL	0.52 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

1. O'Dell TJ, Kandel ER, Grant SG. Long-term potentiation in the hippocampus is blocked by tyrosine kinase inhibitors. Nature. 1991 Oct 10;353(6344):558-60. doi: 10.1038/353558a0. PMID: 1656271.
2. Onoda T, Iinuma H, Sasaki Y, Hamada M, Isshiki K, Naganawa H, Takeuchi T, Tatsuta K, Umezawa K. Isolation of a novel tyrosine kinase inhibitor, lavendustin A, from Streptomyces griseolavendus. J Nat Prod. 1989 Nov-Dec;52(6):1252-7. doi: 10.1021/np50066a009. PMID: 2614420.

In vivo study

1. Whitehead SA, Lacey M. Protein tyrosine kinase activity of lavendustin A and the phytoestrogen genistein on progesterone synthesis in cultured rat ovarian cells. Fertil Steril. 2000 Mar;73(3):613-9. doi: 10.1016/s0015-0282(99)00580-4. PMID: 10689022.
2. Taskinen P, Toth M, Vuolteenaho O, Magga J, Ruskoaho H. Inhibition of atrial wall stretch-induced cardiac hormone secretion by lavendustin A, a potent tyrosine kinase inhibitor. Endocrinology. 1999 Sep;140(9):4198-207. doi: 10.1210/endo.140.9.6967. PMID: 10465292.

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7. Bioactivity

Biological target:

Lavendustin A (RG-14355) is a potent, selective and ATP-competitive inhibitor of epidermal growth factor receptor (EGFR) tyrosine kinase, with an IC50 of 11 nM.

In vitro activity

Lavendustin A and genistein selectively blocked the induction of LTP when applied in the bath or injected into the postsynaptic cell.

Reference: Nature. 1991 Oct 10;353(6344):558-60. https://pubmed.ncbi.nlm.nih.gov/1656271/

In vivo activity

Lavendustin A, a potent inhibitor of protein tyrosine kinases, at the concentrations of 0.5 and 1.3 microM decreased atrial wall stretch-induced ANP secretion (53% and 68%, respectively, $P < 0.001$) in the perfused rat heart preparation, whereas no difference in the hemodynamic variables (heart rate, contractile force and perfusion pressure) were noted between groups. Lavendustin A also completely abolished the wall stretch-induced secretion of BNP.

Reference: Endocrinology. 1999 Sep;140(9):4198-207. https://pubmed.ncbi.nlm.nih.gov/10465292/

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.