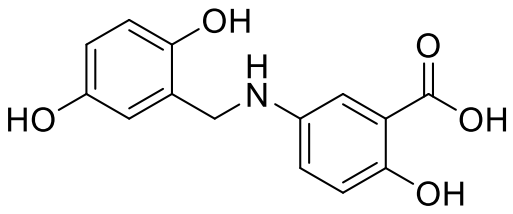
Product data sheet

MedKoo Cat#: 407435 Name: Lavendustin C CAS: 125697-93-0 Chemical Formula: $C_{14}H_{13}NO_5$ Exact Mass: 275.0794 Molecular Weight: 275.26	
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 C, also known as HDBA and NSC 666251, is a potent inhibitor of epidermal growth factor (EGF) receptor-associated tyrosine kinase with an IC50 value of 0.012 μM. HDBA inhibits tyrosine kinase-associated neutrophil degranulation and superoxide generation

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	108.99
DMSO	30.0	108.99

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	3.63 mL	18.16 mL	36.33 mL
5 mM	0.73 mL	3.63 mL	7.27 mL
10 mM	0.36 mL	1.82 mL	3.63 mL
50 mM	0.07 mL	0.36 mL	0.73 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. Valle-Aviles L, Valentin-Berrios S, Gonzalez-Mendez RR, Rodriguez-Del Valle N. Functional, genetic and bioinformatic characterization of a calcium/calmodulin kinase gene in Sporothrix schenckii. BMC Microbiol. 2007 Nov 29;7:107. doi: 10.1186/1471-2180-7-107. PMID: 18047672; PMCID: PMC2242797.

2. Burt HM, Jackson JK, Salari H. Inhibition of crystal-induced neutrophil activation by a protein tyrosine kinase inhibitor. J Leukoc Biol. 1994 Jan;55(1):112-9. doi: 10.1002/jlb.55.1.112. PMID: 8283135.

In vivo study

1. Kobayashi T, Nemoto S, Ishida K, Taguchi K, Matsumoto T, Kamata K. Involvement of CaM kinase II in the impairment of endothelial function and eNOS activity in aortas of Type 2 diabetic rats. Clin Sci (Lond). 2012 Sep;123(6):375-86. doi: 10.1042/CS20110621. PMID: 22494112.

2. Bai GY, Piao FL, Kim SY, Yuan K, Kim SZ, Kim SH. Augmentation of insulin-stimulated ANP release through tyrosine kinase and PI 3-kinase in diabetic rats. Peptides. 2006 Nov;27(11):2756-63. doi: 10.1016/j.peptides.2006.05.014. Epub 2006 Jul 10. PMID: 16828931.

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7. Bioactivity

Biological target:

Lavendustin C is a potent Ca^{2+} calmodulin-dependent kinase II (CaMK II) inhibitor with an IC_{50} of 0.2 μM.

In vitro activity

Inhibition studies using calmodulin inhibitor W-7, and calcium/calmodulin kinase inhibitors, KN-62 and lavendustin C, were found to inhibit budding by cells induced to re-enter the yeast cell cycle and to favor the yeast to mycelium transition.

Reference: BMC Microbiol. 2007 Nov 29;7:107. https://pubmed.ncbi.nlm.nih.gov/18047672/

In vivo activity

The present sutdy has examined the relationship between the CaMKII (Ca(2+)/calmodulin-dependent protein kinase II) pathway and endothelial dysfunction in aortas from GK (Goto-Kakizaki) Type 2 diabetic rats. The ACh (acetylcholine)-induced relaxation and NO production were each attenuated in diabetic aortas (compared with those from age-matched control rats). The ACh-induced relaxations, NO production, eNOS phosphorylation, and CaMKII phosphorylation were inhibited by KN93 and/or by lavendustin C (inhibitors of CaMKII) in control aortas, but not in diabetic ones.

Reference: Clin Sci (Lond). 2012 Sep;123(6):375-86. https://pubmed.ncbi.nlm.nih.gov/22494112/

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.