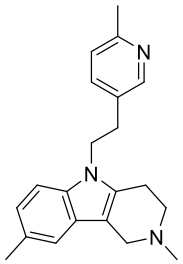
Product data sheet

MedKoo Cat#: 598435 Name: Latrepirdine CAS: 3613-73-8 (free base) Chemical Formula: $C_{21}H_{25}N_3$ Exact Mass: 319.2048 Molecular Weight: 319.452	
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:
Latrepirdine is an orally-available drug, approved in Russia for use as a non-selective antihistamine, that has shown promise in the treatment of neurodegenerative diseases, including Alzheimer's and Huntington's disease. In addition to reported activity in preventing the onset and progression of disease by being neuroprotective, dimebolin appears to promote clinical improvement by increasing cognitive function. At the cellular level, dimebolin appears to have diverse effects, inhibiting the neurotoxic action of β-amyloid and blocking L-type calcium channels,5 inhibiting NMDA-type glutamate receptors, and preventing mitochondrial leakage.

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
TBD	TBD	TBD

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	**1 mg**	**5 mg**	**10 mg**
1 mM	3.13 mL	15.65 mL	31.30 mL
5 mM	0.63 mL	3.13 mL	6.26 mL
10 mM	0.31 mL	1.57 mL	3.13 mL
50 mM	0.06 mL	0.31 mL	0.63 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. Porter T, Bharadwaj P, Groth D, Paxman A, Laws SM, Martins RN, Verdile G. The Effects of Latrepirdine on Amyloid-β Aggregation and Toxicity. J Alzheimers Dis. 2016;50(3):895-905. doi: 10.3233/JAD-150790. PMID: 26836170; PMCID: PMC4927897.
2. Weisová P, Alvarez SP, Kilbride SM, Anilkumar U, Baumann B, Jordán J, Bernas T, Huber HJ, Düssmann H, Prehn JH. Latrepirdine is a potent activator of AMP-activated protein kinase and reduces neuronal excitability. Transl Psychiatry. 2013 Oct 22;3(10):e317. doi: 10.1038/tp.2013.92. PMID: 24150226; PMCID: PMC3818013.

In vivo study

1. Coughlan KS, Mitchem MR, Hogg MC, Prehn JH. "Preconditioning" with latrepirdine, an adenosine 5'-monophosphate-activated protein kinase activator, delays amyotrophic lateral sclerosis progression in SOD1(G93A) mice. Neurobiol Aging. 2015 Feb;36(2):1140-50. doi: 10.1016/j.neurobiolaging.2014.09.022. Epub 2014 Sep 26. PMID: 25443289.
2. Steele JW, Gandy S. Latrepirdine (Dimebon®), a potential Alzheimer therapeutic, regulates autophagy and neuropathology in an Alzheimer mouse model. Autophagy. 2013 Apr;9(4):617-8. doi: 10.4161/auto.23487. Epub 2013 Feb 4. PMID: 23380933; PMCID: PMC3627679.

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7. Bioactivity

Biological target:

Latrepirdine is an orally-available drug, approved in Russia for use as a non-selective antihistamine, that has shown promise in the treatment of neurodegenerative diseases, including Alzheimer's and Huntington's disease.

In vitro activity

The ability of latrepirdine to alter the formation of Aβ42 aggregates was assessed by thioflavin-T fluorescence, western immunoblotting and atomic force microscopy (AFM). Despite showing a reduction in thioflavin-T fluorescence with latrepirdine treatment, indicating a decrease in aggregation, immunoblotting and AFM showed a modest increase in both the formation and size of Aβ aggregates. The ability of latrepirdine to modulate Aβ aggregation appears to be independent of its neuroprotective effects, and is unlikely to be a mechanism by which latrepirdine offers protection.

Reference: J Alzheimers Dis. 2016;50(3):895-905. https://pubmed.ncbi.nlm.nih.gov/26836170/

In vivo activity

Treatment with latrepirdine increased AMPK activity in primary mouse motor neuron cultures and in SOD1(G93A) lumbar spinal cords. Mice "preconditioned" with latrepirdine showed a delayed symptom onset and a significant increase in life span ($p < 0.01$).

Reference: Neurobiol Aging. 2015 Feb;36(2):1140-50. https://pubmed.ncbi.nlm.nih.gov/25443289/

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.