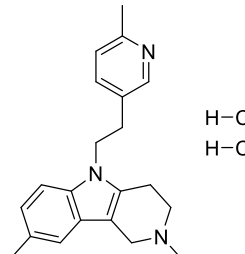


Product data sheet



MedKoo Cat#: 300220 Name: Latrepirdine HCl CAS: 97657-92-6 (HCl) Chemical Formula: C ₂₁ H ₂₇ Cl ₂ N ₃ Molecular Weight: 392.368	 H-Cl H-Cl
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, also known as dimebolin (sold as Dimebon), is an antihistamine drug which has been used clinically in Russia since 1983. Research is continuing in both Russia and western nations into potential applications as a neuroprotective drug to combat Alzheimer's disease and, possibly, as a nootropic as well. However, a Phase III clinical trial for Alzheimer's disease treatment failed to show any benefit. (Source: <http://en.wikipedia.org/wiki/Latrepirdine>)

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	1.0	2.55
DMSO	7.13	18.18
Ethanol	6.5	16.57
PBS (pH 7.2)	10.0	25.49
Water	100.0	254.86

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.55 mL	12.74 mL	25.49 mL
5 mM	0.51 mL	2.55 mL	5.10 mL
10 mM	0.25 mL	1.27 mL	2.55 mL
50 mM	0.05 mL	0.25 mL	0.51 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.

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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.

7. Bioactivity

Biological target:

Latrepirdine dihydrochloride is a neuroactive compound with antagonist activity at histaminergic, α -adrenergic, and serotonergic receptors.

In vitro activity

The ability of latrepirdine to alter the formation of A β 42 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 A β aggregates. The ability of latrepirdine to modulate A β 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.