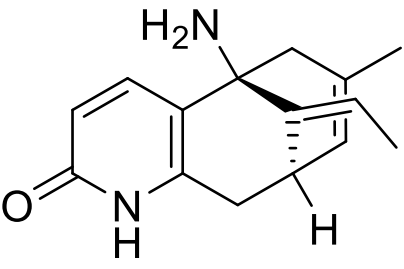


# Product data sheet



MedKoo Cat#: 600142 Name: Huperzine A CAS: 102518-79-6 Chemical Formula: C <sub>15</sub> H <sub>18</sub> N <sub>2</sub> O Exact Mass: 242.1419 Molecular Weight: 242.322		
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:

Huperzine A is an acetylcholinesterase inhibitor and NMDA receptor antagonist. Huperzine A is extracted from *Huperzia serrata*. Huperzine A has been investigated as a possible treatment for diseases characterized by neurodegeneration – particularly Alzheimer's disease. As of 2013 although some research suggests it may be helpful, the evidence overall is not convincing enough for it to be recommended for use as a medicine, and little is known of its safety. Huperzine A is also marketed as a dietary supplement with claims made for its ability to improve memory and mental function. ([http://en.wikipedia.org/wiki/Huperzine\\_A](http://en.wikipedia.org/wiki/Huperzine_A)).

## 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
DMSO	60.0	247.60
Methanol	1.0	4.13

## 4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	4.13 mL	20.63 mL	41.27 mL
5 mM	0.83 mL	4.13 mL	8.25 mL
10 mM	0.41 mL	2.06 mL	4.13 mL
50 mM	0.08 mL	0.41 mL	0.83 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. Hu XN, Wang JF, Huang YQ, Wang Z, Dong FY, Ma HF, Bao ZJ. Huperzine A attenuates nonalcoholic fatty liver disease by regulating hepatocyte senescence and apoptosis: an in vitro study. *PeerJ*. 2018 Jun 26;6:e5145. doi: 10.7717/peerj.5145. PMID: 29967757; PMCID: PMC6025153.

2. Zhu N, Lin J, Wang K, Wei M, Chen Q, Wang Y. Huperzine A protects neural stem cells against A $\beta$ -induced apoptosis in a neural stem cells and microglia co-culture system. *Int J Clin Exp Pathol*. 2015 Jun 1;8(6):6425-33. PMID: 26261518; PMCID: PMC4525852.

### In vivo study

1. Mei Z, Hong Y, Yang H, Sheng Q, Situ B. Huperzine A protects against traumatic brain injury through anti-oxidative effects via the Nrf2-ARE pathway. *Iran J Basic Med Sci*. 2021 Oct;24(10):1455-1461. doi: 10.22038/IJBMS.2021.58169.12932. PMID: 35096305; PMCID: PMC8769513.

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2. Yu P, Dong WP, Tang YB, Chen HZ, Cui YY, Bian XL. Huperzine A lowers intraocular pressure via the M3 mAChR and provides retinal neuroprotection via the M1 mAChR: a promising agent for the treatment of glaucoma. *Ann Transl Med.* 2021 Feb;9(4):332. doi: 10.21037/atm-20-8093. PMID: 33708959; PMCID: PMC7944337.

## 7. Bioactivity

Biological target:

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(-)-Huperzine A is a potent, highly specific, reversible and blood-brain barrier penetrant inhibitor of acetylcholinesterase (AChE), with an IC50 of 82 nM. (-)-Huperzine A also is non-competitive antagonist of N-methyl-D-aspartate glutamate (NMDA) receptor.

In vitro activity

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These results revealed that FFA decreased the cell proliferation activity and viability, but huperzine A reversed the role of FFA in reducing the cell proliferative activity and viability.

Reference: *PeerJ.* 2018 Jun 26;6:e5145. <https://pubmed.ncbi.nlm.nih.gov/29967757/>

In vivo activity

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However, treatment with HupA (Huperzine A) partially rescued GPx activity after TBI (Figure 4B). These data suggest that HupA alleviates oxidative stress and enhances anti-oxidant enzyme activity after TBI.

Reference: *Iran J Basic Med Sci.* 2021 Oct;24(10):1455-1461. <https://pubmed.ncbi.nlm.nih.gov/35096305/>

*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.*