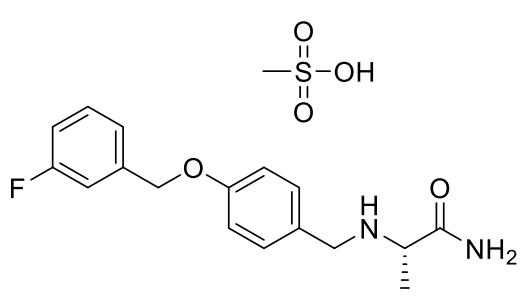


# Product data sheet



MedKoo Cat#: 526246 Name: Safinamide mesylate CAS#: 202825-46-5 (mesylate) Chemical Formula: C <sub>18</sub> H <sub>23</sub> FN <sub>2</sub> O <sub>5</sub> S Molecular Weight: 398.45	
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:

Safinamide mesylate is a third-generation reversible MAO-B inhibitor, which also blocks sodium voltage-sensitive channels and modulates stimulated release of glutamate. Safinamide was recently licensed by EMA for the treatment of PD as add-on therapy to a stable dose of levodopa alone or in combination with other PD medicinal products in mid-to advanced-stage fluctuating patients.

## 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	10	25.10

## 4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.51 mL	12.55 mL	25.10 mL
5 mM	0.50 mL	2.51 mL	5.02 mL
10 mM	0.25 mL	1.25 mL	2.51 mL
50 mM	0.05 mL	0.25 mL	0.50 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

- Gu X, Zhang G, Qin Z, Yin M, Chen W, Zhang Y, Liu X. Safinamide protects against amyloid  $\beta$  (A $\beta$ )-induced oxidative stress and cellular senescence in M17 neuronal cells. *Bioengineered*. 2022 Jan;13(1):1921-1930. doi: 10.1080/21655979.2021.2022262. PMID: 35001806; PMCID: PMC8805854.
- Qian L, Li JZ, Sun X, Chen JB, Dai Y, Huang QX, Jin YJ, Duan QN. Safinamide prevents lipopolysaccharide (LPS)-induced inflammation in macrophages by suppressing TLR4/NF- $\kappa$ B signaling. *Int Immunopharmacol*. 2021 Jul;96:107712. doi: 10.1016/j.intimp.2021.107712. Epub 2021 May 31. PMID: 34162132.

### In vivo study

- Kogo Y, Koebis M, Kobayashi Y, Ishida T, Maeda T. Analgesic effect of safinamide mesylate in a rat model of neuropathic pain. *Behav Brain Res*. 2023 Aug 24;452:114555. doi: 10.1016/j.bbr.2023.114555. Epub 2023 Jun 22. PMID: 37355233.
- Morari M, Brugnoli A, Pisanò CA, Novello S, Caccia C, Melloni E, Padoani G, Vailati S, Sardina M. Safinamide Differentially Modulates In Vivo Glutamate and GABA Release in the Rat Hippocampus and Basal Ganglia. *J Pharmacol Exp Ther*. 2018 Feb;364(2):198-206. doi: 10.1124/jpet.117.245100. Epub 2017 Nov 22. PMID: 29167350.

## 7. Bioactivity

Biological target:

# Product data sheet



Safinamide is a selective MAO-B inhibitor ( $IC_{50} = 0.098 \mu M$ ) over MAO-A ( $IC_{50} = 580 \mu M$ ). Safinamide blocks sodium channels and modulates Glu release, showing a greater affinity at depolarized ( $IC_{50} = 8 \mu M$ ) than at resting ( $IC_{50} = 262 \mu M$ ) potentials.

## In vitro activity

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Safinamide might have potential for the prevention and therapy of Alzheimer's disease. In amyloid ( $A\beta$ )1-42 oligomers-stimulated M17 neuronal cells, safinamide ameliorated  $A\beta$ 1-42 oligomers-induced oxidative stress. Safinamide treatment significantly ameliorated SA- $\beta$ -gal-positive cells and telomerase activity. Safinamide treatment resulted in decreased mRNA and protein expressions of p21 and plasminogen activator inhibitor-1 (PAI-1).

Reference: Bioengineered. 2022 Jan;13(1):1921-1930. <https://pubmed.ncbi.nlm.nih.gov/35001806/>

## In vivo activity

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In a rat model of chronic constriction injury (CCI), safinamide improved neuropathic pain in male CCI rats. Single oral administration of safinamide dose-dependently improved neuropathic pain in pain assessments on day 14. With repeated administration, the effect of safinamide on pain was enhanced.

Reference: Behav Brain Res. 2023 Aug 24;452:114555. <https://pubmed.ncbi.nlm.nih.gov/37355233/>

*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.*