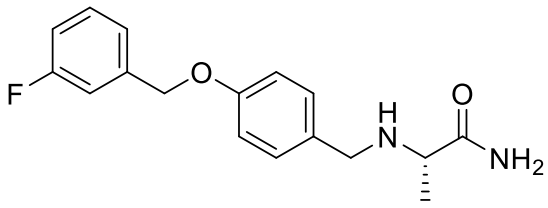
Product data sheet

MedKoo Cat#: 326805 Name: Safinamide CAS#: 133865-89-1 (free base) Chemical Formula: $C_{17}H_{19}FN_2O_2$ Exact Mass: 302.1431 Molecular Weight: 302.35	
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, also known as FCE-26743 and EMD-1195686, is a drug indicated for the treatment of Parkinson's disease with multiple methods of action. Safinamide is a reversible and selective monoamine oxidase B inhibitor, reducing degradation of dopamine, and a glutamate release inhibitor. Safinamide inhibits dopamine reuptake and blocks sodium and calcium channels.

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
To be determined	To be determined	To be determined

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	3.31 mL	16.54 mL	33.07 mL
5 mM	0.66 mL	3.31 mL	6.61 mL
10 mM	0.33 mL	1.65 mL	3.31 mL
50 mM	0.07 mL	0.33 mL	0.66 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. Gu X, Zhang G, Qin Z, Yin M, Chen W, Zhang Y, Liu X. Safinamide protects against amyloid β (Aβ)-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.
2. 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-κB signaling. Int Immunopharmacol. 2021 Jul;96:107712. doi: 10.1016/j.intimp.2021.107712. Epub 2021 May 31. PMID: 34162132.

In vivo study

1. 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.
2. 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 selectibe MAO-B inhibitor (IC50 = 0.098 μM) over MAO-A (IC50 = 580μM). Safinamide blocks sodium channels and modulates Glu release, showing a greater affinity at depolarized (IC50 = 8μM) than at resting (IC50 = 262μM) potentials.

In vitro activity

Safinamide might have potential for the prevention and therapy of Alzheimer's disease. In amyloid (Aβ)1-42 oligomers-stimulated M17 neuronal cells, safinamide ameliorated Aβ1-42 oligomers-induced oxidative stress. Safinamide treatment significantly ameliorated SA-β-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

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.