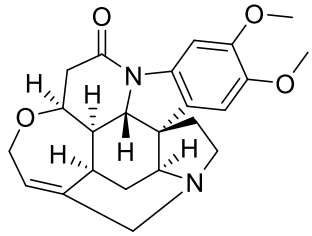
Product data sheet

MedKoo Cat#: 596934 Name: Brucine CAS#: 357-57-3 Chemical Formula: $C_{23}H_{26}N_2O_4$ Exact Mass: 394.1893 Molecular Weight: 394.47	
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:
Brucine is a very toxic alkaloid from Nux vomica similar to strychnine; used as reagent in analytical chemistry.

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
Acetonitrile	10.0	25.35
Chloroform	30.0	76.05

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.54 mL	12.68 mL	25.35 mL
5 mM	0.51 mL	2.54 mL	5.07 mL
10 mM	0.25 mL	1.27 mL	2.54 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. Seshadri VD. Brucine promotes apoptosis in cervical cancer cells (ME-180) via suppression of inflammation and cell proliferation by regulating PI3K/AKT/mTOR signaling pathway. Environ Toxicol. 2021 Jun 2. doi: 10.1002/tox.23304. Epub ahead of print. PMID: 34076332.
2. Liu Q, Wang Q, Lv C, Liu Z, Gao H, Chen Y, Zhao G. Brucine inhibits proliferation of glioblastoma cells by targeting the G-quadruplexes in the c-Myb promoter. J Cancer. 2021 Feb 2;12(7):1990-1999. doi: 10.7150/jca.53689. PMID: 33753997; PMCID: PMC7974541.

In vivo study

1. Liu B, Zhang Y, Wu Q, Wang L, Hu B. Alleviation of isoprenaline hydrochloride induced myocardial ischemia injury by brucine through the inhibition of Na+/K+-ATPase. Exp Gerontol. 2021 Jul 1;149:111332. doi: 10.1016/j.exger.2021.111332. Epub 2021 Mar 27. PMID: 33781843.
2. Ishimwe N, Wei P, Wang M, Zhang H, Wang L, Jing M, Wen L, Zhang Y. Autophagy Impairment through Lysosome Dysfunction by Brucine Induces Immunogenic Cell Death (ICD). Am J Chin Med. 2020;48(8):1915-1940. doi: 10.1142/S0192415X20500962. Epub 2020 Dec 10. PMID: 33308096.

7. Bioactivity
Biological target:

Product data sheet

An alkaloid with diverse biological activities.

In vitro activity

Brucine inhibited the inflammation, cell proliferation and promoted rate of apoptotic cell death ad reduced the mitochondrial potential, which is evidenced by respective (AO/EB, Rh-123, and PI) staining.

Reference: Environ Toxicol. 2021 Jun 2. https://pubmed.ncbi.nlm.nih.gov/34076332/

In vivo activity

Brucine, the main alkaloid bioactive compound from Strychnos nux-vomica seeds, offers unique compatibility advantages in inflammatory diseases associated clinical practices. Thus, the present investigation was projected to explore the activity of brucine towards MI provoked by isoprenaline hydrochloride (ISO) in rats. The cardioprotective properties of brucine were evaluated via detecting the infarct size, serum cardiac marker enzymes (CK, CK-MB, cTnT, and cTnI), endogenous antioxidants (CAT, SOD, GPx), and lipid peroxidation (TBARS and LOOH), inflammatory mediators (NF-κB, TNF-α and IL-6) and histopathological analysis. Brucine's cardioprotective effect might be associated with TNF-α, IL-6 signaling molecules activation, revealing its pharmacological actions.

Reference: Exp Gerontol. 2021 Jul 1;149:111332. https://pubmed.ncbi.nlm.nih.gov/33781843/

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.