

# PRODUCT INFORMATION



## Neferine

Item No. 34753

**CAS Registry No.:** 2292-16-2  
**Formal Name:** 4-[[[(1S)-1,2,3,4-tetrahydro-6,7-dimethoxy-2-methyl-1-isoquinolinyl]methyl]-2-[[[(1R)-1,2,3,4-tetrahydro-6-methoxy-1-[(4-methoxyphenyl)methyl]-2-methyl-7-isoquinolinyl]oxy]-phenol 4''-O-Methyl]iensinine, (-)-Neferine

**Synonyms:**

**MF:** C<sub>38</sub>H<sub>44</sub>N<sub>2</sub>O<sub>6</sub>

**FW:** 624.8

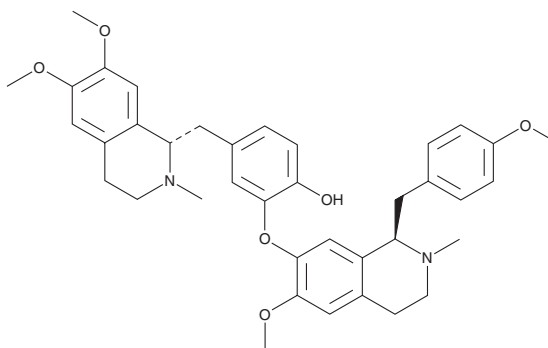
**Purity:** ≥98%

**Supplied as:** A solid

**Storage:** -20°C

**Stability:** ≥4 years

**Item Origin:** Plant/*Plumula Nelumbinis*



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

Neferine is supplied as a solid. A stock solution may be made by dissolving the neferine in the solvent of choice, which should be purged with an inert gas. Neferine is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of neferine in these solvents is approximately 10, 20, and 30 mg/ml, respectively.

Neferine is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, neferine should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Neferine has a solubility of approximately 0.16 mg/ml in a 1:5 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

### Description

Neferine is an alkaloid that has been found in *N. nucifera* and has diverse biological activities.<sup>1-5</sup> It inhibits ADP-, collagen-, thrombin-, U46619-, or adrenaline-induced aggregation of isolated human platelets when used at a concentration of 3 μM.<sup>1</sup> Neferine (2 μM) prevents LPS- and ATP-induced pyroptosis, NLRP3 inflammasome activation, and the production of reactive oxygen species (ROS) in human umbilical vein endothelial cells (HUVECs).<sup>2</sup> It decreases expression of the genes encoding peroxisome proliferator-activated receptor γ (PPARγ), CCAAT/enhancer-binding protein α (C/EBPα), sterol regulatory element binding protein-1c (SREBP-1c), and fatty acid synthase (FASN) and reduces lipid accumulation in 3T3-L1 cells.<sup>3</sup> Neferine enhances TRAIL-induced LC3-II accumulation, a marker of autophagy, and cell death in DU145 prostate cancer cells.<sup>4</sup> *In vivo*, neferine (25 and 50 mg/kg) improves reference and working memory, as well as reduces hippocampal lipid peroxidation and IL-6, IL-1β, and TNF-α levels, in a rat model of aluminum chloride-induced Alzheimer's disease.<sup>5</sup>

### References

1. Yang, R.-P., Zhou, Y.-J., Song, W., et al. *Eur. J. Pharmacol.* **862**, 172626 (2019).
2. Tang, Y.-S., Zhao, Y.-H., Zhong, Y., et al. *Inflamm. Res.* **68(9)**, 727-738 (2019).
3. Park, M., Han, J., and Lee, H.-J. *Nutrients* **12(6)**, 1858 (2020).
4. Naim, U.M., Yin, H., and Park, S.-Y. *Int. J. Oncol.* **56(5)**, 1152-1161 (2020).
5. Yin, S., Ran, Q., Yang, J., et al. *J. Biochem. Mol. Toxicol.* **34(2)**, e22429 (2020).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

#### WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 12/01/2022

#### CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD

ANN ARBOR, MI 48108 · USA

**PHONE:** [800] 364-9897

[734] 971-3335

**FAX:** [734] 971-3640

CUSTSERV@CAYMANCHEM.COM

WWW.CAYMANCHEM.COM