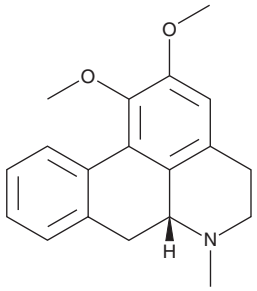
PRODUCT INFORMATION

Nuciferine

Item No. 33839

CAS Registry No.:	475-83-2
Formal Name:	5,6,6aR,7-tetrahydro-1,2-dimethoxy-6-methyl-4H-dibenzo[de,g]quinoline
Synonyms:	(–)-Nuciferine, Sanjoinine E, VLT 049
MF:	$C_{19}H_{21}NO_2$
FW:	295.4
Purity:	≥98%
UV/Vis.:	λ_{max}: 272 nm
Supplied as:	A solid
Storage:	-20°C
Stability:	≥4 years
Item Origin:	Plant/*Nelumbo nucifera* leaf



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

Laboratory Procedures

Nuciferine is supplied as a solid. A stock solution may be made by dissolving the nuciferine in the solvent of choice, which should be purged with an inert gas. Nuciferine is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of nuciferine in ethanol and DMF is approximately 1 mg/ml. Nuciferine is slightly soluble in DMSO

Nuciferine is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, nuciferine should first be dissolved in ethanol and then diluted with the aqueous buffer of choice. Nuciferine has a solubility of approximately 0.25 mg/ml in a 1:3 solution of ethanol:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Nuciferine is an alkaloid that has been found in *N. nucifera* and has diverse biological activities.[1-5] It acts as a partial agonist at dopamine D_2 receptors, as well as an inverse agonist at the serotonin receptor subtype 5-HT_7, and an antagonist at the 5-HT_{2B} and 5-HT_{2C} receptors (EC_{50}s = 65.07, 150, 478, and 131 nM, respectively).[1] Nuciferine is also an antagonist at schistosome Sm.5-HTR_L receptors (IC_{50} = 240 nM) and inhibits 5-HT-induced motility of larval and adult *S. mansoni* when used at a concentration of 10 µM.[2] It activates PPARα, PPARβ/δ, and PPARγ transcriptional activity in reporter assays and inhibits IL-6 and TNF-α production induced by LPS in RAW 264.7 cells[3] It prevents ferroptotic cell death induced by the GPX4 inhibitor RSL3 in HK-2 and HEK293T cells when used at concentrations of 10, 20, and 40 µM and prevents lipid peroxidation in a mouse model of acute kidney injury.[4] Dietary administration of nuciferine (15 mg/kg) reduces increases in serum triglyceride, total cholesterol, LDL, and free fatty acid levels, as well as markers of hepatic steatosis, in a mouse model of high-fat diet-induced hyperlipidemia.[5]

References

1. Farrell, M.S., McCorvy, J.D., Huang, X.-P., *et al. PLoS One* **11(3)**, e0150602 (2016).
2. Chan, J.D., Acharya, S., Day, T.A., *et al. Int. J. Parasitol. Drugs Drug Resist.* **6(3)**, 364-370 (2016).
3. Zhang, C., Deng, J., Liu, D., *et al. Molecules* **23(10)**, 2723 (2018).
4. Li, D., Liu, B., Fan, Y., *et al. Br. J. Pharmacol.* **178(5)**, 1182-1199 (2021).
5. Guo, F., Yang, X., Li, X., *et al. PLoS One* **8(5)**, e63770 (2013).

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