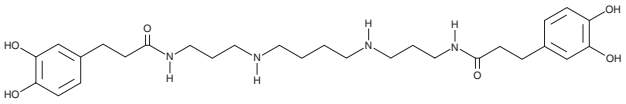
PRODUCT INFORMATION

Kukoamine A

Item No. 25139

CAS Registry No.: 75288-96-9
Formal Name: N,N'-[1,4-butanediylbis(imino-3,1-propanediyl)]*bis*[3,4-dihydroxy-benzenepropanamide]
MF: $C_{28}H_{42}N_4O_6$
FW: 530.7
Purity: ≥95%
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years
Item Origin: Plant/*Lycii Cortex*



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

Laboratory Procedures

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

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of kukoamine A can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of kukoamine A in PBS (pH 7.2) is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Kukoamine A is a spermine alkaloid originally isolated from *L. chinense* that has diverse biological activities, including anticancer, neuroprotective, and anti-inflammatory properties.[1] Kukoamine A (5-20 µg/ml) inhibits colony formation of U251 and WJ1 glioblastoma cells in a concentration-dependent manner.[2] It halts the cell cycle at the G_0/G_1 phase and induces apoptosis when used at concentrations of 60 and 80 µg/ml. Kukoamine A (20 and 40 µM) induces autophagy and increases cell viability in an SH-SY5Y cell model of MPP-induced injury.[3] It increases the number of dopamine neurons in the substantia nigra and striatum, decreases α-synuclein expression, and improves motor function in an MPTP mouse model of Parkinson's disease when administered at a dose of 20 mg/kg per day. Kukoamine A (10 and 20 mg/kg) decreases IL-1β, TNF-α, and COX-2 protein levels in the hippocampus and increases hippocampal neurogenesis in a rat model of radiation injury.[4] It also selectively inhibits trypanothione reductase (K_i = 1.8 µM), an enzyme that protects certain parasites from oxidative stress, over human glutathione reductase (K_i = >10 mM).[5]

References

1. Funayama, S., Yoshida, K., Konno, C., *et al. Tetrahedron Lett.* **21(14)**, 1355-1356 (1980).
2. Wang, Q., Li, H., Sun, Z., *et al. Sci. Rep.* **6:36543** (2016).
3. Hu, X., Song, Q., Li, X., *et al. Neuropharmacology* **117**, 352-363 (2017).
4. Zhang, Y., Gao, L., Cheng, Z., *et al. Neurotox. Res.* **31(2),** 259-268 (2017).
5. Ponasik, J.A., Strickland, C., Faerman, C., *et al. Biochem. J.* **311(Pt 2),** 371-375 (1995).

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