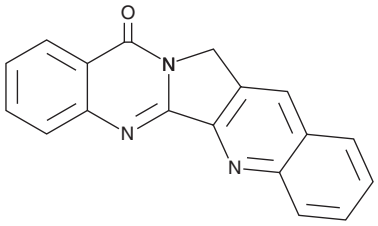
PRODUCT INFORMATION

Luotonin A

Item No. 14253

CAS Registry No.:	205989-12-4
Formal Name:	quino[2',3':3,4]pyrrolo[2,1-b] quinazolin-11(13H)-one
MF:	$C_{18}H_{11}N_3O$
FW:	285.3
Purity:	≥98%
UV/Vis.:	λ_{max}: 213, 247, 326, 341, 357 nm
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥4 years



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

Laboratory Procedures

Luotonin A is supplied as a crystalline solid. A stock solution may be made by dissolving the luotonin A in the solvent of choice, which should be purged with an inert gas. Luotonin A is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of luotonin A in these solvents is approximately 3 mg/ml. Luotonin A is soluble in a 1:1 solution of chloroform:Methanol at a concentration of approximately 2 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Luotonin A is an alkaloid originally isolated from a plant used in traditional Chinese medicine.[1] It inhibits the growth of mouse leukemia P388 cells (IC_{50} = 1.8 µg/ml).[1] Luotonin A is structurally similar to the alkaloid camptothecin (Item No. 11694) and, like camptothecin, it binds to and stabilizes the topoisomerase I-DNA binary complex, leading to DNA breakage and cell death (IC_{50} = 5.07-12.6 µM).[2] Also like camptothecin, luotonin A forms non-covalent complexes with double-stranded DNA in the minor groove and this association can be followed by native fluorescence associated with the aromatic and heterocyclic ring structure.[3] Luotonin A also selectively inhibits the cytochrome P450 (CYP) isoforms CYP1A1 and CYP1A2 (IC_{50} = ~6 µM for each) in human liver microsomes.[4]

References

1. Liang, J.L., Cha, H.C., and Jahng, Y. Recent advances in the studies on luotonins. *Molecules* **16(6)**, 4861-4883 (2011).
2. Cagir, A., Jones, S.H., Gao, R., *et al.* Luotonin A. A naturally occurring human DNA topoisomerase I poison. *J. Am. Chem. Soc.* **125(45)**, 13628-13629 (2003).
3. Mussardo, P., Corda, E., González-Ruiz, V., *et al.* Study of non-covalent interactions of luotonin A derivatives and the DNA minor groove as a first step in the study of their analytical potential as DNA probes. *Anal. Bioanal. Chem.* **400(2)**, 321-327 (2011).
4. Jahng, Y., Kwon, O.K., and Lee, S. *In vitro* inhibitory effect of luotonin A on human CYP1A. *Arch. Pharm. Res.* **35(12)**, 2199-2203 (2012).

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