

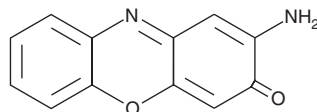
PRODUCT INFORMATION



Questionmycin A

Item No. 27623

CAS Registry No.: 1916-59-2
Formal Name: 2-amino-3H-phenoxazin-3-one
MF: $C_{12}H_8N_2O_2$
FW: 212.2
Purity: $\geq 98\%$
UV/Vis.: λ_{max} : 239, 433 nm
Supplied as: A solid
Storage: $-20^{\circ}C$
Stability: ≥ 4 years
Item Origin: Synthetic



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

Laboratory Procedures

Questionmycin A is supplied as a solid. A stock solution may be made by dissolving the questionmycin A in the solvent of choice, which should be purged with an inert gas. Questionmycin A is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of questionmycin A in these solvents is approximately 3 and 2 mg/ml, respectively.

Questionmycin A is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, questionmycin A should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Questionmycin A has a solubility of approximately 0.04 mg/ml in a 1:20 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Questionmycin A is a phenoxazine and a chromophore that has been found in *Streptomyces* and has antibacterial and anticancer activities.¹⁻⁵ It is active against *M. scrofulaceum*, *M. marinum*, and *M. intracellulare* (MICs = 2.8, 11.3, and 5.6 $\mu\text{g/ml}$, respectively) but not *M. tuberculosis*, *M. smegmatis*, *M. kansasii*, or *M. fortuitum* (MICs = >45 $\mu\text{g/ml}$).³ It is also inactive against *E. coli*, *P. aeruginosa*, *S. typhimurium*, *S. aureus*, or *L. monocytogenes*. It is cytotoxic to a variety of cancer cells, including MCF-7, A549, MIA PaCa-2, and LoVo-1 cells (IC_{50} s = 1.67, 5.48, 7.16, and 20.03 μM , respectively) as well as human umbilical vein endothelial cells (HUVECs) but not human embryonic lung fibroblast cells (HELs; IC_{50} s = 16.06 and >50 μM , respectively).⁴ Questionmycin A reduces the increased intracellular pH in a variety of cancer cell lines, as well as in HUVECs and HELs. It prevents lung metastasis in a B16 mouse melanoma model of metastasis when administered at a dose of 0.5 mg/kg simultaneously with B16 cells or every three days.⁵ It is also a chromophore product of the reducing agent 2-aminophenol oxidation (as 2-amino-phenoxazine-3-one) and has been used as a readout in the study of catalytic oxidation of 2-aminophenol by various metal-containing complexes.^{2,6} It has an absorbance of 435 nm in methanol.²

References

1. Anzai, K., Isono, K., Okuma, K., et al. *Rikagaku Kenkyusho Hokoku* **36**, 577-583 (1960).
2. Jana, N.C., Patra, M., Brandão, P., et al. *Polyhedron* **164**, 23-34 (2019).
3. Shimizu, S., Suzuki, M., Tomoda, A., et al. *Tohoku J. Exp. Med.* **203(1)**, 47-52 (2004).
4. Che, X.-F., Zheng, C.-L., Akiyama, S.-I., et al. *Proc. Jpn. Acad. Ser. B Phys. Biol. Sci.* **87(4)**, 199-213 (2011).
5. Hongo, T., Miyano-Kurosaki, N., Kurosaki, K., et al. *J. Pharmacol. Sci.* **114(1)**, 63-68 (2010).
6. Mukherjee, C., Weyhermüller, T., Bothe, E., et al. *Inorg. Chem.* **46(23)**, 9895-9905 (2007).

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.

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