

Product data sheet



MedKoo Cat#: 573980 Name: Questioniomycin A CAS#: 1916-59-2 Chemical Formula: C ₁₂ H ₈ N ₂ O ₂ Exact Mass: 212.0586 Molecular Weight: 212.2080	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C > 4 years In solvent: -80°C 3 months; -20°C 2 weeks.

1. Product description:

Questioniomycin A is a phenoxazine and a chromophore that has been found in *Streptomyces* and has antibacterial and anticancer activities.

2. CoA, QC data, SDS, and handling instruction

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under "QC And Documents" section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMF	2	9.42
DMSO	3	14.14
DMSO:PBS (pH 7.2) (1:20)	0.04	0.19

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	4.71 mL	23.56 mL	47.12 mL
5 mM	0.94 mL	4.71 mL	9.42 mL
10 mM	0.47 mL	2.36 mL	4.71 mL
50 mM	0.09 mL	0.47 mL	0.94 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator

Please refer the product web page under section of "Calculator"

6. Recommended literature which reported protocols for in vitro and in vivo study

In vitro study

- Guo S, Hu H, Wang W, Bilal M, Zhang X. Production of Antibacterial Questioniomycin A in Metabolically Engineered *Pseudomonas chlororaphis* HT66. *J Agric Food Chem.* 2022 Jun 29;70(25):7742-7750. doi: 10.1021/acs.jafc.2c03216. Epub 2022 Jun 15. PMID: 35708224.
- Igarashi Y, Takagi K, Kajiura T, Furumai T, Oki T. Glucosylquestioniomycin, a novel antibiotic from *Microbispora* sp. TP-A0184: fermentation, isolation, structure determination, synthesis and biological activities. *J Antibiot (Tokyo).* 1998 Oct;51(10):915-20. doi: 10.7164/antibiotics.51.915. PMID: 9917004.

In vivo study

TBD

7. Bioactivity

Biological target:

Questioniomycin A is active against *M. scrofulaceum*, *M. marinum*, and *M. intracellulare*. It is cytotoxic to a variety of cancer cells, including MCF-7, A549, MIA PaCa-2, and LoVo-1 cells as well as human umbilical vein endothelial cells (HUVECs). Questioniomycin A reduces the increased intracellular pH in a variety of cancer cell lines, as well as in HUVECs and HELs.

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In vitro activity

Questionomycin A has been elucidated to share the same biosynthesis process with PCA by gene deletion and in vitro assays. Through rational metabolic engineering, heterologous phenoxazinone synthase introduction, and medium optimization, the titer reached 589.78 mg/L in *P. chlororaphis*, the highest production reported to date. This work contributes to a better understanding of Questionomycin A biosynthesis and demonstrates a promising approach to developing a new antibacterial biopesticide in *Pseudomonas*.

Reference: J Agric Food Chem. 2022 Jun 29;70(25):7742-7750. <https://pubmed.ncbi.nlm.nih.gov/35708224/>

In vivo activity

TBD

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.