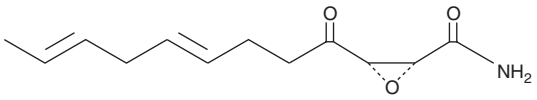
PRODUCT INFORMATION

Cerulenin

Item No. 10005647

CAS Registry No.: 17397-89-6
Formal Name: 2R,3S-epoxy-4-oxo-7,10-dodecadienamide
Synonyms: Helicocerin, NSC 116069
MF: $C_{12}H_{17}NO_3$
FW: 223.3
Purity: ≥98%
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years
Item Origin: Fungus/*Cephalosporium caerulens*



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

Laboratory Procedures

Cerulenin is supplied as a crystalline solid. A stock solution may be made by dissolving the cerulenin in the solvent of choice, which should be purged with an inert gas. Cerulenin is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of cerulenin in these solvents is approximately 20, 25, and 30 mg/ml, respectively.

Cerulenin is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, cerulenin should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Cerulenin has a solubility of approximately 0.2 mg/ml in a 1:6 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Cerulenin is a fungal metabolite originally isolated from *C. caerulens* that has diverse biological activities.[1-3] It is active against a variety of bacteria, including *B. subtilis*, *E. coli*, *B. megaterium*, and *B. anthracis* (MICs = 12.5, 12.5, 50, and 50 µg/ml, respectively) and fungi, including strains of *C. albicans*, *T. rubrum*, and *A. fumigatus* (MICs = 0.8-3.7, 3.1-6.2 and 12.5-50 µg/ml, respectively).[1] Cerulenin is an inhibitor of fatty acid synthase type I (FAS-I) and FAS-II (IC_{50}s = 3 and 20 µM, respectively, for the *E. coli* enzymes).[2] It inhibits fatty acid synthesis in a panel of human cancer cell lines, including breast, ovarian, and endometrial cancer cells, as well as reduces tumor growth in a OVCAR-3 mouse xenograft model.[3]

References

1. Omura, S. The antibiotic cerulenin, a novel tool for biochemistry as an inhibitor of fatty acid synthesis. *Bacteriol. Rev.* **40(3)**, 681-697 (1976).
2. Price, A.C., Choi, K.-H., Heath, R.J., *et al.* Inhibition of β-ketoacyl-acyl carrier protein synthases by thiolactomycin and cerulenin. Structure and mechanism. *J. Biol. Chem.* **276(9)**, 6551-6559 (2001).
3. Pizer, E.S., Wood, F.D., Heine, H.S., *et al.* Inhibition of fatty acid synthesis delays disease progression in a xenograft model of ovarian cancer. *Cancer Res.* **56(6)**, 1189-1193 (1996).

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