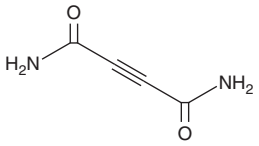
PRODUCT INFORMATION

Cellocidin

Item No. 23637

CAS Registry No.: 543-21-5
Formal Name: 2-butynediamide
Synonyms: Acetylenedicarboxylic Acid, NSC 38643, NSC 65381
MF: $C_4H_4N_2O_2$
FW: 112.1
Purity: ≥95%
UV/Vis.: λ_{max}: 212 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥2 years



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

Laboratory Procedures

Cellocidin is supplied as a crystalline solid. A stock solution may be made by dissolving the cellocidin in the solvent of choice. Cellocidin is soluble in organic solvents such as DMSO and dimethyl formamide, which should be purged with an inert gas. The solubility of cellocidin in these solvents is approximately 20 and 10 mg/ml, respectively.

Cellocidin is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, cellocidin should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Cellocidin has a solubility of approximately 0.12 mg/ml in a 1:7 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Cellocidin is an antibiotic originally isolated from *S. chibaensis*.[1] It is active against various bacterial strains including *M. tuberculosis* and against the trypanosomes *T. brucei* and *T. rhodesiense* (IC_{50}s = 150 and 30 ng/ml, respectively).[1,2] It inhibits proliferation of LCL1 and LCL2 cells transformed by Epstein-Barr virus (EBV), activates the c-Myc and NF-κB pathways in BC3 and LCL1 cells, and induces necrotic cell death in B cells infected with gammaherpes virus.[3] Cellocidin (100-200 ppm) is protective against bacterial leaf blight in rice plants and inhibits α-ketoglutarate oxidation in *X. oryzae*, the bacterium that causes leaf blight, when used at a concentration of 1 ppm, suggesting that it inhibits the citric acid cycle.[4]

References

1. Suzuki, S., Nakamura, G., Okuma, K., *et al*. Cellocidin, a new antibiotic. *J. Antibiot. (Tokyo)* **11(3)**, 81-83 (1958).
2. Otoguro, K., Ishiyama, A., Namatame, M., *et al*. Selective and potent *in vitro* antitrypanosomal activities of ten microbial metabolites. *J. Antibiot. (Tokyo)* **61(6)**, 372-378 (2008).
3. Dzeng, R.K., Jha, H.C., Lu, J., *et al*. Small molecule growth inhibitors of human oncogenic gammaherpesvirus infected B-cells. *Mol. Oncol.* **9(2)**, 365-376 (2015).
4. Misato, T. Mode of action of agricultural antibiotics developed in Japan. *Residue Rev.* **25**, 93-106 (1969).

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