
Product Data Sheet

Product Name: Germicidin B

Cat. No.: GC16571

Chemical Properties

Cas. No. 150973-78-7

Chemical Name 3-ethyl-4-hydroxy-6-(1-methylethyl)-2H-pyran-2-one

SMILES O=C1OC(C(C)C)=CC(O)=C1CCFormula $C_{10}H_{14}O_3$

M.Wt 182.2

Solubility DMF: Soluble, DMSO: Soluble, Ethanol: Soluble, Methanol: Soluble
Storage Store at -20°C

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT, or blue ice upon request.

Structure **Background**

Germicidin is a pyranone antibiotic originally excreted by *Streptomyces viridochromogenes* NRRL B-1551. Germicidin has an inhibitory effect on the germination of its own arthrospores at a concentration as low as 200 pM (40 pg/ml). Higher concentrations of germicidin inhibited porcine Na⁺/K⁺-activated ATPase and retarded the germination of the cress *Lepidium sativum* with an ID₅₀ of 100 μM. Germicidin was the first known autoregulative inhibitor of spore germination in the genus *Streptomyces* and was isolated from the supernatant of germinated spores, but also from the supernatant of the submerged culture [1].

Germicidins B inhibited germination of *S. coelicolor* A3(2) spores above 1 μg/ml. The *S. coelicolor* A3(2) spores collected from a single petri dish (9 cm i.d.) contained 5.4 μg of germicidin A (~2.7 × 10⁻¹⁴ g per spore) and contents of germicidins B, C and D were 0.2–0.8 μg. The activity of the spore extract corresponded well with the sum of the

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activity of each germicidin. Germicidins functioned as self-germination inhibitors in *S. coelicolor* A3(2) [2].

References:

[1] PETERSEN F, ZHNER H, METZGER J W, et al. Germicidin, an autoregulative germination inhibitor of *Streptomyces viridochromogenes* NRRL B-1551[J]. *The Journal of antibiotics*, 1993, 46(7): 1126-1138.

[2] Aoki Y, Matsumoto D, Kawaide H, et al. Physiological role of germicidins in spore germination and hyphal elongation in *Streptomyces coelicolor* A3 (2)[J]. *The Journal of antibiotics*, 2011, 64(9): 607-611.

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