Product Data Sheet

Product Name: Decoyinine (Angustmycin A)
Cat. No.: GC33093

Chemical Properties

Cas. No.	2004-04-8		
SMILES	C=C(O1)[C@@H](O)[C@@H](O)[C@]1(CO)N2C=NC3=C(N)N=CN=C32		
Formula	$C_{11}H_{13}N_5O_4$	M.Wt	279.25
Solubility	Soluble in DMSO	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ 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	Decoyinine (Angustmycin A)		

Protocol

Cell experiment:

The isogenic strains WLN-4 (sacA321 amyRJ-amyE+) and WLN-11 (sacA321 gra-10-amyE+) are inoculated into minimal S7 medium, containing 2% (wt/vol) glucose, from washed exponential-phase seed cultures grown in the same medium. At mid-logarithmic growth phase, each culture is evenly subdivided into two flasks containing either 1/10 the culture volume of fresh S7 medium or a 1/10 volume of filter-sterilized S7 medium to which 2.5 mg of Decoyinine per ml has previously been dissolved (final Decoyinine concentration, 250 μg/mL). At regular intervals before and after the decoyinine addition, samples are removed from the cultures and the culture supernatants are assayed for a-amylase as described previously. At 16 h after the Decoyinine addition, the frequency of heatresistant spores in each culture is determined[2].

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com
Address: 10292 Central Ave. #205, Montclair, CA, USA

Product Data Sheet

Animal experiment:

Mice[1]SK-Mel-103 and SK-Mel-28 cells are inoculated subcutaneously in both flanks of SCID mice (18 mice/cell line). Once tumors volume reach approximately 100 mm3, mice are randomly assigned to one of four groups and treated with daily i.p. injections of Decoyinine (120 mg/kg), MMF (30 mg/kg), or with respective vehicles. Tumor size is measured every other day with a caliper and mice are killed once tumor volume reach 1000 mm3 or the animals show signs of morbidity[1].

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com
Address: 10292 Central Ave. #205, Montclair, CA, USA

References:

[1]. A Bianchi-Smiraglia, et al. Pharmacological targeting of guanosine monophosphate synthase suppresses melanoma cell invasion and tumorigenicity. Cell Death Differ. 2015 Nov; 22(11): 1858–1864.
[2]. W L Nicholson, et al. Effect of Decoyinine on the regulation of alpha-amylase synthesis in Bacillus subtilis. J Bacteriol. 1987 Dec; 169(12): 5867–5869.

Background

Decoyinine is a nucleoside analog and a reversible and non-competitive inhibitor of GMP synthase (IC_{50} = 17.3 ?M).[1] It reduces intracellular levels of GMP, GDP, and GTP, induces sporulation, and inhibits growth and cell wall synthesis in *B. subtilis*.[2,3,4] It also

reverses inhibition of aerial mycelium formation in *Streptomyces* grown in the presence of excess nutrients.[5]

1.Nakamura, J., and Lou, L.Biochemical characterization of human GMP synthetaseJ. Biol. Chem.270(13)7347-7353(1995) 2.Uratani, B., Lopez, J.M., and Freese, E.Effect of decoyinine on peptidoglycan synthesis and turnover in Bacillus subtilisJ. Bacteriol.154(1)261-268(1983) 3.Zain-ul-abedin, Lopez, J.M., and Freese, E.Induction of bacterial differentiation by adenine- and adenosine-analogs and inhibitors of nucleic acid synthesisNucleos. Nucleot.2(3)257-274(1983) 4.Bai, U., Lewandoski, M., Dubnau, E., et al.Temporal regulation of the Bacillus subtilis early sporulation gene spo0FJ. Bacteriol.172(9)5432-5439(1990) 5.Ochi, K.A decrease in GTP content is associated with aerial mycelium formation in Streptomyces MA406-A-1J. Gen. Microbiol.132(2)299-305(1986)