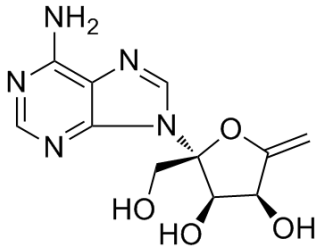
Decoyinine

Cat. No.:	HY-101835
CAS No.:	2004-04-8
Molecular Formula:	$C_{11}H_{13}N_5O_4$
Molecular Weight:	279.25
Target:	Others
Pathway:	Others

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	6 months
	-20°C	1 month



BIOLOGICAL ACTIVITY

Description	Decoyinine is a selective inhibitor of GMP synthetase (GMPS).
IC_{50} & Target	GMPS[1].
In Vitro	Decoyinine is an analog of adenosine which causes a decrease in intracellular GTP levels by inhibition of GMP synthetase. Decoyinine exerts a stimulatory effect on oaamylase synthesis only in the strain in which the catabolite repression component of a-amylase regulation has been rendered inoperable by the gra-10 mutation. The apparent stimnulation of a-amylase activity in WLN-11 by Decoyinine is not an artifactual effect exerted at the level of enzyme activity itself. It is observed that purine nucleotides, most notably GMP, exhibits a dramatic inhibitory effect on the activity of Bacillus circulans F-2 amylase and a less-pronounced inhibitory effect on B. subtilis aamylase. At the concentration used in the experiments (1.07 mM), Decoyinine has no effect in vitro on B. subtilis WLN-11 oaamylase activity. At the same concentration, GMP exerts a slight inhibitory effect on aamylase activity[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	It is showed that Decoyinine (Angustmycin A) treatment hinders tumor growth in xenograft mouse model. Moreover, like GMPS activity, the effect of Decoyinine does not appear to be subtype specific as it impairs growth of xenografts from cells harboring NRASQ61R (SK-Mel-103) or BRAFV600E (SK-Mel-28) mutations[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay [2]	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]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Administration [1]	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 mm^3, 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 mm^3 or the animals show signs of morbidity[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

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.

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