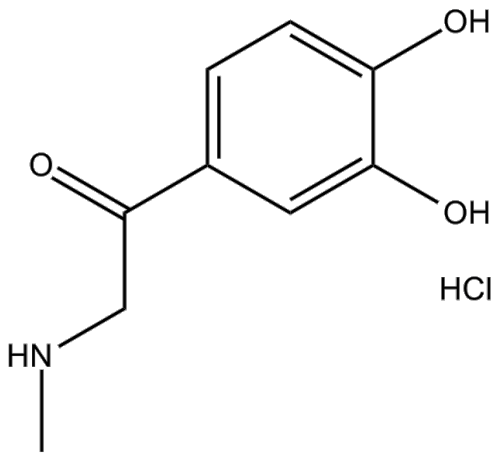
Product Data Sheet

Product Name: Adrenalone HCl
Cat. No.: GC13814

Chemical Properties

Cas. No.	62-13-5		
Chemical Name	1-(3,4-dihydroxyphenyl)-2-(methylamino)ethanone;hydrochloride		
SMILES	CNCC(=O)C1=CC(=C(C=C1)O)O.Cl		
Formula	$C_9H_{11}NO_3$.HCl	M.Wt	217.65
Solubility	≥ 10.88mg/mL in DMSO	Storage	Store at -20°C,unstable in solution, ready to use.
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



Protocol

Cell experiment [1]:

Cell lines SK-Mel-28 and SK-Mel103 cells

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Preparation Method	Cells were incubated with 2 mM Decoyinine (Angustmycin A) for 24h before invasion assay. Where indicated, cells were supplemented with 100 μM guanosine. Control cells were treated with equal volumes of DMSO. Drug treatments were maintained throughout the experimental procedure.
Reaction Conditions	2 mM;24h
Applications	Treatment of SK-Mel-28 and SK-Mel103 cells with 2 mM of Decoyinine(Angustmycin A) reduced their invasion by ~30% compared with vehicle-treated cells.

Animal experiment [2]:

Animal models	4-6-week-old female SCID mice
Preparation Method	SK-Mel-103 and SK-Mel-28 cells were inoculated into both flanks of SCID mice. When tumors reached 100 mm3 in size, mice were randomly assigned to different treatment groups and treated with daily i.p. injection of Decoyinine (Angustmycin A) (120 mg/kg in 10% DMSO in PBS), Mycophenolate Mofetil, or the correspondent vehicle control.
Dosage form	120 mg/kg; i.p., 10-27days
Applications	In SK-Mel-103 cells mcie, Decoyinine (Angustmycin A) treatment resulted in a 36% reduction of xenografts volume while MMF caused only 19% volume reduction. In SK-Mel-28 cells mcie, the xenograft volume reduction caused by Decoyinine (Angustmycin A) and MMF were of 62% and 30%, respectively.

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Product Data Sheet

References:

[1]. Bianchi-Smiraglia A, Wawrzyniak JA, et,al.Pharmacological targeting of guanosine monophosphate synthase suppresses melanoma cell invasion and tumorigenicity. Cell Death Differ. 2015 Nov;22(11):1858-64. doi: 10.1038/cdd.2015.47. Epub 2015 Apr 24. PMID: 25909885; PMCID: PMC4648332.

Background

Decoyinine (Angustmycin A), a specific inhibitor of bacterial GMPS, has been isolated from Streptomyces hygroscopius as a potential antibiotic with sporulation-inducing activity in Bacillus subtilis[1-3]. Angustmycin A was also recently found to be a promising cytokinin that induces adventitious root or bud differentiation[5].

With 2 mM of Angustmycin A treatment of SK-Mel-28 and SK-Mel103 cells reduced their invasion by ~30% compared with vehicle-treated cells[4]. Decoyinine (Angustmycin A) (>1mM) enabled the S. griseus IFO 13189 cells to develop aerial mycelia in the suppressed cultures at concentrations which only partially inhibited growth[6].

Decoyinine (Angustmycin A)(120 mg/kg; i.p., 10days) treatment resulted in a 36% reduction of xenografts volume while MMF caused only 19% volume reduction in SK-Mel-103 mcie. In SK-Mel-28 mcie, the xenograft volume reduction caused by angustmycin A(120 mg/kg; i.p., 27days) and MMF were of 62% and 30%, respectively[4].

References:
[1]. Vasantha N, Freese E. Enzyme changes during Bacillus subtilis sporulation caused by deprivation of guanine nucleotides. J Bacteriol. 1980 Dec;144(3):1119-25. doi: 10.1128/jb.144.3.1119-1125.1980. PMID: 6777366; PMCID: PMC294778.
[2]. Ikehara K, Okamoto M, et,al. Induction of Bacillus subtilis sporulation by decoyinine and the concomitant disappearance of ppGpp in vegetative cells. J Biochem 1982; 91: 1089-1092.
[3]. Mitani T, Heinze JE, et,al. Induction of sporulation in Bacillus subtilis by decoyinine or hadacidin. Biochem Biophys Res Commun 1977; 77: 1118-1125.
[4]. Bianchi-Smiraglia A, Wawrzyniak JA, et,al.Pharmacological targeting of guanosine monophosphate synthase suppresses melanoma cell invasion and tumorigenicity. Cell Death Differ. 2015 Nov;22(11):1858-64. doi: 10.1038/cdd.2015.47. Epub 2015 Apr 24. PMID: 25909885; PMCID:

PMC4648332.
[5]. Hong-Yuan, X., Hong-Zhang, X., et,al. in Biotechnology and Sustainable Agriculture 2006 and Beyond (eds. Xu, Z., Li, J., Xue, Y. & Yang, W.) 97-101 (Springer Netherlands, 2010).
[6]. Ochi K. Metabolic initiation of differentiation and secondary metabolism by Streptomyces griseus: significance of the stringent response (ppGpp) and GTP content in relation to A factor. J Bacteriol. 1987 Aug;169(8):3608-16. doi: 10.1128/jb.169.8.3608-3616.1987. PMID: 3112126; PMCID: PMC212439.

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