

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

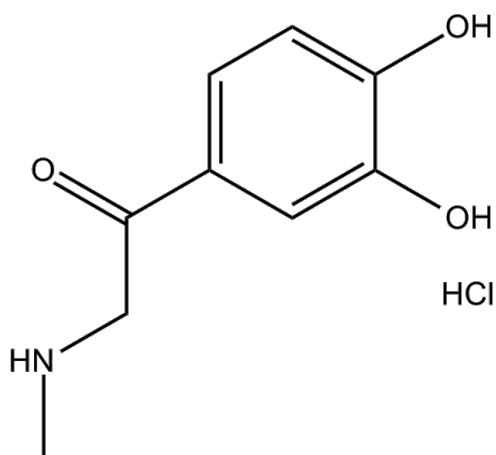
Formula $C_9H_{11}NO_3 \cdot HCl$ M.Wt 217.65

Solubility $\geq 10.88\text{mg/mL}$ 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

Caution: Product has not been fully validated for medical applications. For research use only.

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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 μ M 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., 10-27 days

Applications In SK-Mel-103 cells mice, Decoyinine (Angustmycin A) treatment resulted in a 36% reduction of xenografts volume while MMF caused only 19% volume reduction. In SK-Mel-28 cells mice, the xenograft volume reduction caused by Decoyinine (Angustmycin A) and MMF were of 62% and 30%, respectively.

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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 hygroscopicus* 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:

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[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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