Acefylline

Cat. No.: HY-B1505

CAS No.: 652-37-9

Molecular Formula: $C_9H_{10}N_4O_4$

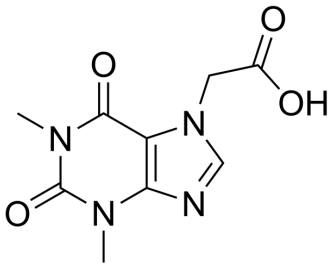
Molecular Weight: 238.2

Target: Adenosine Receptor; Protein Arginine Deiminase; Phosphodiesterase (PDE)

Pathway: GPCR/G Protein; Epigenetics; Metabolic Enzyme/Protease

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	2 years
	-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : 33.33 mg/mL (139.92 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	4.1982 mL	20.9908 mL	41.9815 mL
	5 mM	0.8396 mL	4.1982 mL	8.3963 mL
	10 mM	0.4198 mL	2.0991 mL	4.1982 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (10.50 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (10.50 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Acefylline, a xanthine derivative, is an adenosine receptor antagonist. Acefylline is a peptidylarginine deiminase (PAD) activator. Acefylline is also a bronchodilator and cardiac stimulant that inhibits rat lung cAMP phosphodiesterase isoenzymes. Acefylline can be used in asthma research[1][2][3].

IC_{50} & Target

adenosine receptor[1]

In Vitro

Acefylline (200 μM; 5-180 min) is an effective PDA activator[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Tsvetkova B, Tencheva J, Peikov P. Esterification of 7-theophyllineacetic acid with diethylene glycol monomethyl ether. Acta Pharm. 2006 Jun;56(2):251-7. PMID: 16613730.

[2]. Ferretti C, et al. Inhibitory effect of theophylline, theophylline-7-acetic acid, ambroxol and ambroxol-theophylline-7-acetate on rat lung cAMP phosphodiesterase isoenzymes. Int J Tissue React. 1992;14(1):31-6.

[3]. Méchin MC, et, al. Acefylline activates filaggrin deimination by peptidylarginine deiminases in the upper epidermis. J Dermatol Sci. 2016 Feb;81(2):101-6.

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

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