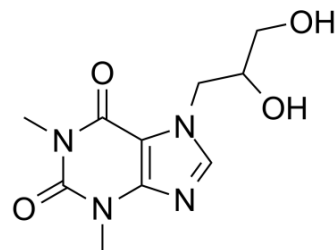


Diphylline

Cat. No.:	HY-B0128	
CAS No.:	479-18-5	
Molecular Formula:	C ₁₀ H ₁₄ N ₄ O ₄	
Molecular Weight:	254.24	
Target:	Adenosine Receptor; Phosphodiesterase (PDE)	
Pathway:	GPCR/G Protein; Metabolic Enzyme/Protease	
Storage:	Powder	-20°C 3 years 4°C 2 years
	In solvent	-80°C 6 months -20°C 1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 50 mg/mL (196.66 mM)
 H₂O : 20 mg/mL (78.67 mM; Need ultrasonic)
 * "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	3.9333 mL	19.6665 mL	39.3329 mL
	5 mM	0.7867 mL	3.9333 mL	7.8666 mL
	10 mM	0.3933 mL	1.9666 mL	3.9333 mL

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

In Vivo

- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
Solubility: ≥ 3 mg/mL (11.80 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: ≥ 3 mg/mL (11.80 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
Solubility: ≥ 3 mg/mL (11.80 mM); Clear solution
- Add each solvent one by one: PBS
Solubility: 100 mg/mL (393.33 mM); Clear solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

Diphylline (Diprophylline) is a potent A₁/A₂ adenosine receptor antagonist and cyclic nucleotide phosphodiesterase inhibitor. Diphylline, a xanthine derivative, is a bronchodilator and vasodilator drug and has the potential for chronic bronchitis and emphysema^{[1][2]}.

In Vitro

Dyphylline (trade names Dilor, Lufyllin), also known as diprophylline, is a xanthine derivative with bronchodilator and vasodilator effects. It is used in the treatment of respiratory disorders like asthma, cardiac dyspnea, and bronchitis. It acts as an adenosine receptor antagonist and phosphodiesterase inhibitor.

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

REFERENCES

[1]. Schwabe U, et al. Xanthine derivatives as antagonists at A1 and A2 adenosine receptors. *Naunyn Schmiedebergs Arch Pharmacol.* 1985 Sep;330(3):212-21.

[2]. Yosry El-said, et al. In-vitro evaluation of sustained-release dyphylline tablets. *Drug Development and Industrial Pharmacy.* Volume 17, 1991 - Issue 2

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

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