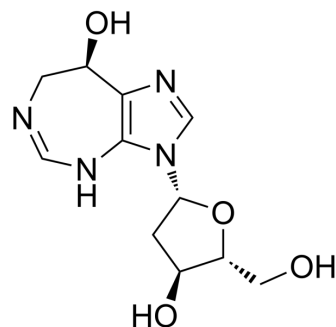


Pentostatin

Cat. No.:	HY-A0006		
CAS No.:	53910-25-1		
Molecular Formula:	C ₁₁ H ₁₆ N ₄ O ₄		
Molecular Weight:	268.27		
Target:	Adenosine Deaminase; Antibiotic		
Pathway:	Metabolic Enzyme/Protease; Anti-infection		
Storage:	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	1 year
		-20°C	6 months



SOLVENT & SOLUBILITY

In Vitro

H₂O : 100 mg/mL (372.76 mM; Need ultrasonic)
 DMSO : ≥ 50 mg/mL (186.38 mM)
 * "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	3.7276 mL	18.6379 mL	37.2759 mL
	5 mM	0.7455 mL	3.7276 mL	7.4552 mL
	10 mM	0.3728 mL	1.8638 mL	3.7276 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: ≥ 2.08 mg/mL (7.75 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
Solubility: ≥ 2.08 mg/mL (7.75 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil
Solubility: ≥ 2.08 mg/mL (7.75 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Pentostatin (CI-825; Deoxycoformycin) is an irreversible inhibitor of adenosine deaminase with K_i of 2.5 pM.

IC₅₀ & Target

K_i: 2.5 pM (adenosine deaminase)

In Vivo

In ECP and Pentostatin (CI-825; Deoxycoformycin; 4 mg/m², i.v.) treatment, all dogs develop granulocytopenia with <500

granulocytes/ μL from day 4. Thrombocytopenia ($<20,000$ platelets/ μL) occurs from day 7 after HCT with nadirs of 3000 to 14000 platelets/ μL ^[1]. Pentostatin (2 mg/kg) in combination with cordycepin (2 mg/kg) is 100% effective in the *T. evansi*-infected mice. There is an increase in levels of some biochemical parameters, especially on liver enzymes, which are accompanied by histological lesions in the liver and kidneys. Pentostatin individually has no curative effect on infected groups^[2].

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

PROTOCOL

Animal Administration ^[1]

All recipient dogs are conditioned for transplantation by 920 cGy TBI at 7 cGy/minute using a linear accelerator. Dogs in group A1 receive ECP administered on days -2 and -1 with TBI on day 0 and dogs in group A2 receive ECP on days -6 and -5, intravenous (IV) infusion of pentostatin at a dose of 4 mg/m² on days -4 and -3, and TBI on day 0. Donor marrow cells from DLA-nonidentical donors are aspirated under general anesthesia through needles inserted into humeri and femora and stored in heparinized tissue culture medium at 4°C for no more than 6 hours. Within 4 hours of TBI, harvested marrow cells are infused IV into recipients at a median dose of 2.9 (range, 1.9 to 6.1) $\times 10^8$ total nucleated cells (TNC)/kg. The day of marrow grafting is designated as day 0. In addition to marrow graft, recipients are given IV infusions of peripheral blood buffy coat cells obtained by leukapheresis from the marrow donor on days 1 and 2, at a median dose of 2.3 (range, 1.2 to 6.9) $\times 10^8$ TNC/kg to ensure consistent hematopoietic engraftment. MTX, at a dose of 0.4 mg/kg intravenously is used as postgrafting immunosuppression and administered on days +1, +3, +6 and +11, then weekly thereafter until day 102. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Sci Transl Med. 2020 May 6;12(542):eaba0769.
- J Nanobiotechnology. 2019 Mar 29;17(1):45.
- PLoS Pathog. 2020 Mar 16;16(3):e1008341.
- Virulence. 2018;9(1):1509-1520.
- Neurobiol Stress. 2021 Sep 11;15:100396.

See more customer validations on www.MedChemExpress.com

REFERENCES

[1]. Bethge WA, et al. Extracorporeal photopheresis combined with pentostatin in the conditioning regimen for canine hematopoietic cell transplantation does not prevent GVHD. Bone Marrow Transplant. 2014 Sep;49(9):1198-204.

[2]. Dalla Rosa L, et al. Cordycepin (3'-deoxyadenosine) pentostatin (deoxycoformycin) combination treatment of mice experimentally infected with *Trypanosoma evansi*. Parasitology. 2013 Apr;140(5):663-71.

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

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA