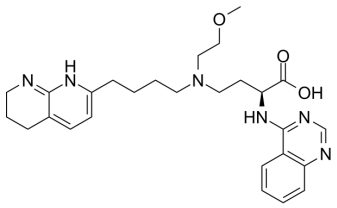
Bexotegrast

Cat. No.:	HY-137561
CAS No.:	2376257-44-0
Molecular Formula:	$C_{27}H_{36}N_6O_3$
Molecular Weight:	492.61
Target:	Integrin
Pathway:	Cytoskeleton
Storage:	4°C, sealed storage, away from moisture and light * In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 250 mg/mL (507.50 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.0300 mL	10.1500 mL	20.3000 mL
	5 mM	0.4060 mL	2.0300 mL	4.0600 mL
	10 mM	0.2030 mL	1.0150 mL	2.0300 mL

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

In Vivo

1. Add each solvent one by one: PBS
   Solubility: 12.5 mg/mL (25.38 mM); Clear solution; Need ultrasonic and warming and heat to 60°C
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.08 mg/mL (4.22 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (4.22 mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (4.22 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Bexotegrast (PLN-74809) is an orally active, potent dual αvβ6/αvβ1 integrin inhibitor with K_d of 5.7 nM and 3.4 nM, respectively. Bexotegrast inhibits αvβ6- and αvβ1-induced TGF-β activation with IC_{50} values of 29.8 nM and 19.2 nM, respectively. Bexotegrast has antifibrogenic effects and block multiple avenues of TGF-β activation in the fibrotic lung[1][2].

IC_{50} & Target		
	αvβ6 5.7 nM (Kd)	αvβ1 3.4 nM (Kd)

In Vitro	Bexotegrast (PLN-74809; 1.82 μM; 7-day incubation) significantly reduces collagen type I alpha I (COL1A1) mRNA expression by 54% in precision-cut lung slices (PCLSs). PLN-74809 shows an approximately 50% reduction in Smad2 phosphorylation[2]. Bexotegrast (1.82 μM; 3-day incubation) dose-dependently reduces Col1a1 mRNA expression in PCLSs prepared from fibrotic mouse lungs by up to 71%[2]. Bexotegrast fully inhibits αvβ6 integrin-mediated adhesion to LAP by normal human bronchial epithelial cells with an IC_{50} of 39.3 nM[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Bexotegrast (PLN-74809; orally; 100, 250, and 500 mg/kg twice daily; from Day 7 to Day 21) shows a dose-dependent, significant reduction in interstitial fibrillar collagen deposition in Bleomycin-challenged mice. Bexotegrast dose-dependently blocks Smad3 phosphorylation[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	C57BL/6 mice[2]
Dosage:	100, 250, and 500 mg/kg
Administration:	Orally; twice daily; from Day 7 to Day 21
Result:	Showed a dose-dependent, significant reduction in interstitial fibrillar collagen deposition in Bleomycin (3 units/kg)-challenged mice. Dose-dependently blocked Smad3 phosphorylation.

REFERENCES

[1]. Martin L Decaris, et al. Dual inhibition of αvβ6 and αvβ1 reduces fibrogenesis in lung tissue explants from patients with IPF. Respir Res. 2021 Oct 19;22(1):265.

[2]. Anindya Roy, et al. De novo design of highly selective miniprotein inhibitors of integrins αvβ6 and αvβ8. Nat Commun. 2023 Sep 13;14(1):5660.

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