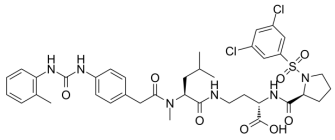
BIO5192

Cat. No.:	HY-107589
CAS No.:	327613-57-0
Molecular Formula:	$C_{38}H_{46}Cl_2N_6O_8S$
Molecular Weight:	817.78
Target:	Integrin
Pathway:	Cytoskeleton
Storage:	Powder -20°C 3 years In solvent -80°C 6 months -20°C 1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 12.5 mg/mL (15.29 mM; ultrasonic and warming and heat to 60°C)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	1.2228 mL	6.1141 mL	12.2282 mL
	5 mM	0.2446 mL	1.2228 mL	2.4456 mL
	10 mM	0.1223 mL	0.6114 mL	1.2228 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: ≥ 1.25 mg/mL (1.53 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 1.25 mg/mL (1.53 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

BIO5192 is a selective and potent integrin α4β1 (VLA-4) inhibitor (K_d<10 pM). BIO5192 selectively binds to α4β1 (IC_{50}=1.8 nM) over a range of other integrins. BIO5192 results in a 30-fold increase in mobilization of murine hematopoietic stem and progenitors (HSPCs) over basal levels[1][2].

IC_{50} & Target

α4β1	α9β1	α2β1	α4β7
1.8 nM (IC_{50})	138 nM (IC_{50})	1053 nM (IC_{50})	>500 nM (IC_{50})

In Vivo

The combination of BIO5192 (1 mg/kg; i.v.) and Plerixafor (5 mg/kg; s.c.) exert an additive effect on progenitor mobilization [1].

BIO5192 (30 mg/kg; s.c; bid; during days 5 through 14) delays paralysis associated with EAE (experimental autoimmune encephalomyelitis)[2].

BIO5192 (1 mg/kg, i.v.) shows the terminal half-life is 1.1 hours. BIO5192 (3, 10, and 30 mg/kg; s.c.) shows half-lives of 1.7, 2.7, and 4.7 hours, respectively. The blood plasma curves show that the AUC for the s.c. route of administration increased about 2.5-fold from 5,460 h*ng/ml for the 3 mg/kg dose to 14,175 h*ng/ml for the 30 mg/kg[1].

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

Animal Model:	C57BL/6J x 129Sv/J F1 mice[1]
Dosage:	1 mg/kg (with Plerixafor: 5 mg/kg)
Administration:	I.v.
Result:	Exerted an additive effect on progenitor mobilization.

Animal Model:	Healthy female Lewis rats weighing 150g[2]
Dosage:	30 mg/kg
Administration:	S.c; bid; during days 5 through 14
Result:	Showed a 3-day delay in onset of disease.

REFERENCES

[1]. Ramirez P, et al. BIO5192, a small molecule inhibitor of VLA-4, mobilizes hematopoietic stem and progenitor cells. Blood. 2009;114(7):1340-1343.

[2]. Leone DR, et al. An assessment of the mechanistic differences between two integrin alpha 4 beta 1 inhibitors, the monoclonal antibody TA-2 and the small molecule BIO5192, in rat experimental autoimmune encephalomyelitis. J Pharmacol Exp Ther. 2003;305(3):

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