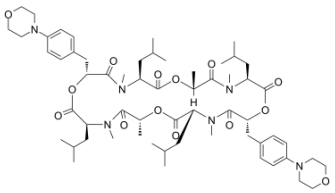
Emodepside

Cat. No.:	HY-101476
CAS No.:	155030-63-0
Molecular Formula:	$C_{60}H_{90}N_6O_{14}$
Molecular Weight:	1119.39
Target:	Parasite
Pathway:	Anti-infection
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 : 120 mg/mL (107.20 mM; Need ultrasonic)

H_2O : < 0.1 mg/mL (ultrasonic) (insoluble)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	0.8933 mL	4.4667 mL	8.9334 mL
5 mM	0.1787 mL	0.8933 mL	1.7867 mL
10 mM	0.0893 mL	0.4467 mL	0.8933 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: 3 mg/mL (2.68 mM); Suspended solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: 3 mg/mL (2.68 mM); Suspended solution; Need ultrasonic
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 3 mg/mL (2.68 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Emodepside (PF 1022-221) is a cyclooctadepsipeptide with broad-spectrum anthelmintic activity.

In Vitro

Emodepside is a semisynthetic derivative of PF1022A, which contains a morpholine attached in para position at each of both D-phenyllactic acids. Emodepside is efficacious against a variety of gastrointestinal nematodes. Emodepside binds to a presynaptic latrophilin receptor in nematodes[1]. Emodepside produces a slow time-dependent (20 min), 4-aminopyridine sensitive, concentration-dependent hyperpolarization and increase in voltage-activated K currents. Emodepside has an inhibitory effect on spiking. Emodepside significantly inhibits the ryanodine increase in spike frequency between the 20 and

	35 min period by 9.8 spikes/min[2]. In the presence of emodepside, highly increased currents are observed without depolarization up to a threshold of 0 mV and without any additional stimuli to artificially increase [Ca^{2+}]i levels. These novel findings confirm that Slo-1 is a direct target of emodepside[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Emodepside interferes with signaling at the neuromuscular junction on the body-wall muscles, pharynx and egg-laying muscles and thus inhibits three important physiological functions: locomotion, feeding and reproduction[4]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Harder A, et al. Mechanisms of action of emodepside. Parasitol Res. 2005 Oct;97 Suppl 1:S1-10.

[2]. Buxton SK, et al. On the mode of action of emodepside: slow effects on membrane potential and voltage-activated currents in Ascaris suum. Br J Pharmacol. 2011 Sep;164(2b):453-70.

[3]. Kulke D, et al. Characterization of the Ca2+-gated and voltage-dependent K+-channel Slo-1 of nematodes and its interaction with emodepside. PLoS Negl Trop Dis. 2014 Dec 18;8(12):e3401.

[4]. Bull K, et al. Effects of the novel anthelmintic emodepside on the locomotion, egg-laying behaviour and development of Caenorhabditis elegans. Int J Parasitol. 2007 May;37(6):627-36.

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