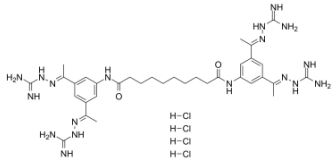
Semapimod tetrahydrochloride

Cat. No.:	HY-15509A
CAS No.:	164301-51-3
Molecular Formula:	$C_{34}H_{56}Cl_4N_{18}O_2$
Molecular Weight:	890.74
Target:	TNF Receptor; Interleukin Related; p38 MAPK
Pathway:	Apoptosis; Immunology/Inflammation; MAPK/ERK Pathway
Storage:	-20°C, protect from light * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



BIOLOGICAL ACTIVITY

Description	Semapimod tetrahydrochloride (CNI-1493), an inhibitor of proinflammatory cytokine production, can inhibit TNF-α, IL-1β, and IL-6. Semapimod tetrahydrochloride inhibits TLR4 signaling (IC_{50}≈0.3 μM). Semapimod tetrahydrochloride inhibits p38 MAPK and nitric oxide production in macrophages. Semapimod tetrahydrochloride has potential in a variety of inflammatory and autoimmune disorders[1][2][3].			
IC_{50} & Target	TNF-α	IL-1β	IL-6	p38 MAPK
In Vitro	Semapimod tetrahydrochloride leads to a significant decrease of p38-MAPK phosphorylation in macrophages, proinflammatory gene expression of macrophage inflammatory protein-1alpha, interleukin-6, monocyte chemoattractant protein-1, and intercellular adhesion molecule-1, and neutrophil infiltration. Semapimod tetrahydrochloride completely abrogated nitric oxide production within the tunica muscularis[2]. Semapimod tetrahydrochloride desensitizes TLR signaling via its effect on the TLR chaperone gp96. Semapimod tetrahydrochloride inhibits ATP-binding and ATPase activities of gp96 in vitro (IC_{50}≈0.2-0.4 μM). Semapimod tetrahydrochloride desensitizes TLR signaling via its effect on the TLR chaperone gp96[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.			
In Vivo	Semapimod tetrahydrochloride (5 mg/kg; i.p; daily for 2 weeks) ameliorates endothelial dysfunction in Obese Zucker (OZ) rats[1]. Semapimod tetrahydrochloride restores AM-induced akt phosphorylation and cGMP production in OZ rats[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.			

Animal Model:	Male OZ rats[1]
Dosage:	5 mg/kg
Administration:	I.p; daily for 2 weeks
Result:	Restored endothelium-dependent vasorelaxation in OZ rats.

REFERENCES

[1]. Wehner S, Set al. Inhibition of p38 mitogen-activated protein kinase pathway as prophylaxis of postoperative ileus in mice. Gastroenterology. 2009;136(2):619-629.

[2]. Nishimatsu H, et al. Blockade of endogenous proinflammatory cytokines ameliorates endothelial dysfunction in obese Zucker rats. Hypertens Res. 2008;31(4):737-743.

[3]. Wang J, et al. Experimental Anti-Inflammatory Drug Semapimod Inhibits TLR Signaling by Targeting the TLR Chaperone gp96. J Immunol. 2016;196(12):5130-5137.

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