Terlipressin

Cat. No.: HY-12554

CAS No.: 14636-12-5

Molecular Formula: $C_{52}H_{74}N_{16}O_{15}S_2$

Molecular Weight: 1227.37

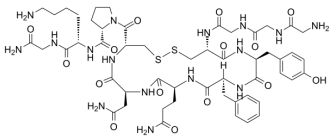
Sequence: Gly-Gly-Gly-Cys-Tyr-Phe-Gln-Asn-Cys-Pro-Lys-Gly-NH2 (Disulfide bridge: Cys4-Cys9)

Sequence Shortening: GGGCYFQNCPKG-NH2 (Disulfide bridge: Cys4-Cys9)

Target: Vasopressin Receptor

Pathway: GPCR/G Protein

Storage: Please store the product under the recommended conditions in the Certificate of Analysis.



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (81.48 mM; Need ultrasonic)

Preparing Stock Solutions	Concentration / Solvent / Mass	1 mg	5 mg	10 mg
	1 mM	0.8148 mL	4.0738 mL	8.1475 mL
	5 mM	0.1630 mL	0.8148 mL	1.6295 mL
	10 mM	0.0815 mL	0.4074 mL	0.8148 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: ≥ 2.5 mg/mL (2.04 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (2.04 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (2.04 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Terlipressin is a vasopressin analogue with potent vasoactive properties. Terlipressin is a highly selective vasopressin V1 receptor agonist that reduces the splanchnic blood flow and portal pressure and controls acute variceal bleeding. Terlipressin exerts anti-inflammatory and anti-oxidative effects. Terlipressin has the potential for hepatorenal syndrome and norepinephrine-resistant septic shock research[1][2][3][4][5].

IC_{50} & Target

Vasopressin V1 receptor[1]

In Vitro	Terlipressin (25 nM; 24-72 hours; IEC-6 cells) treatment significantly improves cell viability, proliferation and apoptosis in IEC-6 cells[1]. Terlipressin inhibits the secretion of TNF-α and 15-F2t-isoprostane from IEC-6 cells following oxygen and glucose deprivation/re-oxygenation (OGD/R). Terlipressin administration following OGD attenuates OGD/R-induced cell damage via the PI3K signaling pathway[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only. Cell Proliferation Assay[1]

Cell Line:	IEC-6 cells induced by oxygen and glucose deprivation/re-oxygenation (OGD/R)
Concentration:	25 nM
Incubation Time:	24 hours, 48 hours, 72 hours
Result:	Significantly increased the proliferation of IEC-6 cells.

In Vivo	Using a mouse nonlethal hepatic ischemia-reperfusion (IR) model, Terlipressin administration significantly ameliorates IR-induced liver apoptosis, necrosis and inflammation[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Sci Rep. 2020 Dec 3;10(1):21037.

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REFERENCES

[1]. Zi-Meng Liu, et al. Terlipressin Protects Intestinal Epithelial Cells Against Oxygen-Glucose Deprivation/Re-Oxygenation Injury via the Phosphatidylinositol 3-kinase Pathway. Exp Ther Med. 2017 Jul;14(1):260-266.

[2]. Yeun Tarl Fresner Ng Jao, et al. Refractory Torsade De Pointes Induced by Terlipressin (Glypressin). Int J Cardiol. 2016 Nov 1;222:135-140.

[3]. Xiqiang Liu, et al. Signaling Through Hepatocyte Vasopressin Receptor 1 Protects Mouse Liver From Ischemia-Reperfusion Injury. Oncotarget. 2016 Oct 25;7(43):69276-69290.

[4]. Xinmiao Zhou, et al. Terlipressin for the Treatment of Acute Variceal Bleeding: A Systematic Review and Meta-Analysis of Randomized Controlled Trials. Medicine (Baltimore). 2018 Nov;97(48):e13437.

[5]. Alastair O'Brien, et al. Terlipressin for Norepinephrine-Resistant Septic Shock. Lancet. 2002 Apr 6;359(9313):1209-10.

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