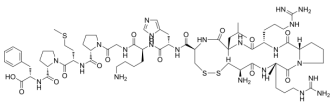
MM 07

Cat. No.: HY-108003

CAS No.: 1876450-21-3

Molecular Formula: $C_{67}H_{106}N_{22}O_{14}S_3$

Molecular Weight: 1539.89



Sequence: Cys-Arg-Pro-Arg-Leu-Cys-His-Lys-Gly-Pro-Met-Pro-Phe (Disulfide bridge:Cys1-Cys6)

Sequence Shortening: CRPRLCHKGPMPF (Disulfide bridge:Cys1-Cys6)

Target: Apelin Receptor (APJ)

Pathway: GPCR/G Protein

Storage: Sealed storage, away from moisture

Powder -80°C 2 years

-20°C 1 year

* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture)

SOLVENT & SOLUBILITY

In Vitro

DMSO : 62.5 mg/mL (40.59 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	0.6494 mL	3.2470 mL	6.4940 mL
	5 mM	0.1299 mL	0.6494 mL	1.2988 mL
	10 mM	0.0649 mL	0.3247 mL	0.6494 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: ≥ 6.25 mg/mL (4.06 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 6.25 mg/mL (4.06 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 6.25 mg/mL (4.06 mM); Clear solution

BIOLOGICAL ACTIVITY

Description MM 07 is a biased apelin receptor agonist, with a K_D of 300 nM in CHO-K1 cells and a K_D of 172 nM in human heart.

IC_{50} & Target KD: 300 nM (apelin receptor in CHO-K1 cells), 172 nM (apelin receptor in human heart)[1].

In Vitro MM 07 competes with nanomolar affinities for binding of [Glp^{65},Nle^{75},Tyr^{77}] [^{125}I]apelin-13 to human apelin receptors in

	CHO-K1 cells (K_D, 300 nM) and human heart (K_D, 172 nM, n=3)[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	MM 07 causes a dose-dependent increase in cardiac output, and although there is a decrease in vascular resistance, this is without corresponding effects on BP. Administration of SNAP produces a profound fall in BP in both [Pyr^1]apelin-13 and MM 07-treated groups; however, although cardiac output is significantly increased in response to SNAP in the MM 07 group, it is significantly reduced in the [Pyr^1]apelin-13 group. Neither peptide causes a significant change in heart rate, respiratory rate, or temperature. Both [Pyr^1]apelin 13 and MM 07 increases peak velocity above basal levels[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Animal Administration [1]	Rats[1]Rats (230-260 g), anaesthetized with 2% isoflurane, are given a single intravenous bolus (600 nM) of apelin or MM 07 (both n=3)[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Brame AL, et al. Design, characterization, and first-in-human study of the vascular actions of a novel biased apelin receptor agonist. Hypertension. 2015 Apr;65(4):834-40.

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