

## Certificate of Analysis

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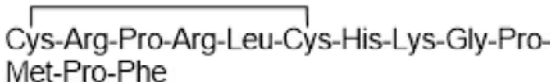
**Product Name:** MM 07

**Catalog No.:** 7053

**Batch No.:** 2

**CAS Number:** 1876450-21-3

### 1. PHYSICAL AND CHEMICAL PROPERTIES

**Batch Molecular Formula:** C<sub>67</sub>H<sub>106</sub>N<sub>22</sub>O<sub>14</sub>S<sub>3</sub>  
**Batch Molecular Weight:** 1539.89  
**Physical Appearance:** White lyophilised solid  
**Counter Ion:** TFA  
**Solubility:** Soluble to 2 mg/ml in water  
**Storage:** Store at -20°C  
**Peptide Sequence:** 

### 2. ANALYTICAL DATA

**HPLC:** Shows 97.4% purity  
**Mass Spectrum:** Consistent with structure

### 3. AMINO ACID ANALYSIS DATA

Amino Acid Theoretical			Amino Acid Theoretical Actual		
Ala			Lys	1.00	1.00
Arg	2.00	1.99	Met	1.00	0.97
Asx			Phe	1.00	1.00
Cys	2.00	Detected	Pro	3.00	3.01
Glx			Ser		
Gly	1.00	1.02	Thr		
His	1.00	1.00	Trp		
Ile			Tyr		
Leu	1.00	1.00	Val		

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

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## Product Information

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**Product Name:** MM 07

**Catalog No.:** 7053

**Batch No.:** 2

CAS Number: 1876450-21-3

### Description:

MM 07 is an apelin biased agonist; exhibits bias for the G protein pathway. Stimulates endothelial NOS phosphorylation and expression, promotes proliferation, and attenuates apoptosis of human pulmonary arterial endothelial cells in vitro. Shows positive inotropic and vasodilatory effects in vivo and improves cardiac structure and function in a model of pulmonary arterial hypertension.

### Physical and Chemical Properties:

Batch Molecular Formula: C<sub>67</sub>H<sub>106</sub>N<sub>22</sub>O<sub>14</sub>S<sub>3</sub>

Batch Molecular Weight: 1539.89

Physical Appearance: White lyophilised solid

### Peptide Sequence:

Cys-Arg-Pro-Arg-Leu-Cys-His-Lys-Gly-Pro-  
Met-Pro-Phe

**Storage:** Store at -20°C

### Solubility & Usage Info:

Soluble to 2 mg/ml in water

This product is supplied as a lyophilized solid and may be very hard to visualize. Solutions should be made by adding solvent directly to the vial. The vial should then be vortexed vigorously to ensure the product has completely dissolved.

**Counter Ion:** TFA

### Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Peptides in solution are much less stable than in lyophilized form. This is especially true for peptides whose sequences contain amino acids such as Cys, Met, Trp, Asn, Gln, and N-terminal Glu.

Therefore we recommend storing peptides in solution for as short a time as possible. Avoid repeated freeze thaw cycles by dividing the peptide solution into aliquots and storing the aliquots at -20°C. Any portion of an aliquot unused after thawing should be discarded.

Peptides stored in solution can occasionally be susceptible to bacterial degradation. We recommend using sterile solutions or passing the peptide solution through a 0.2 µm filter to remove potential bacterial contamination whenever possible.

### References:

**Yang *et al*** (2019) A novel cyclic biased agonist of the apelin receptor, MM07, is disease modifying in the rat monocrotaline model of pulmonary arterial hypertension. *Br.J.Pharmacol.* **176** 1206. PMID: 30710493.

**Brame *et al*** (2015) Design, characterization, and first-in-human study of the vascular actions of a novel biased apelin receptor agonist. *Hypertension* **65** 834. PMID: 25712721.

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