

**Product Name:** PMX 53  
CAS Number: 219639-75-5

**Catalog No.:** 5473      **Batch No.:** 6

**1. PHYSICAL AND CHEMICAL PROPERTIES**

**Batch Molecular Formula:** C<sub>47</sub>H<sub>65</sub>N<sub>11</sub>O<sub>7</sub>  
**Batch Molecular Weight:** 896.1  
**Physical Appearance:** White lyophilised solid  
**Net Peptide Content:** 79%  
**Counter Ion:** TFA  
**Solubility:** Soluble to 2 mg/ml in water  
**Storage:** Store at -20°C  
**Peptide Sequence:** Ac-Phe-cyclo(Orn-Pro-D-Cha-Trp-Arg)

**2. ANALYTICAL DATA**

**HPLC:** Shows 99% purity  
**Mass Spectrum:** Consistent with structure

**3. AMINO ACID ANALYSIS DATA**

Amino Acid Theoretical		Actual		Amino Acid Theoretical		Actual	
Ala				Lys			
Arg	1.00	1.01	Met				
Asx			Phe	1.00	0.98		
Cys			Pro	1.00	1.01		
Glx			Ser				
Gly			Thr				
His			Trp	1.00	Detected		
Ile			Tyr				
Leu			Val				

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**Description:**

Potent C5a receptor antagonist (IC<sub>50</sub> = 20 nM). Also MrgX2 agonist. Stimulates MrgX2-mediated mast cell degranulation. Also inhibits C5a-induced hypernociception in rats, inhibits lung metastasis in a mouse breast cancer model and reduces atherosclerotic lesions in a mouse model of atherosclerosis. Negative Control also available.

**Physical and Chemical Properties:**

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Batch Molecular Weight: 896.1

Physical Appearance: White lyophilised solid

**Peptide Sequence:**

Ac-Phe-cyclo(Orn-Pro-D-Cha-Trp-Arg)

**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.

**Net Peptide Content:** 79% (Remaining weight made up of counterions and residual water).

**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:**

**Kumar et al** (2018) Development and validation of a LC-MS/MS assay for pharmacokinetic studies of complement C5a receptor antagonists PMX53 and PMX205 in mice. *Sci.Rep.* **8** 8101. PMID: 29802264 .

**Vadrevu et al** (2014) Complement c5a receptor facilitates cancer metastasis by altering T-cell responses in the metastatic niche. *Cancer Res.* **74** 3454. PMID: 24786787.

**Manthey et al** (2011) Complement C5a inhibition reduces atherosclerosis in ApoE<sup>-/-</sup> mice. *FASEB J* **25** 2447. PMID: 21490292.

**Subramanian et al** (2011) PMX-53 as a dual CD88 antagonist and an agonist for Mas-related gene 2 (MrgX2) in human mast cells. *Mol.Pharmacol.* **79** 1005. PMID: 21441599.

**Ting et al** (2008) Role of complement C5a in mechanical inflammatory hypernociception: potential use of C5a receptor antagonists to control inflammatory pain. *Br.J.Pharmacol.* **153** 1043. PMID: 18084313.

**Finch et al** (1999) Low-molecular-weight peptidic and cyclic antagonists of the receptor for the complement factor C5a. *J.Med.Chem.* **42** 1965. PMID: 10354404.

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