

# Certificate of Analysis

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**Product Name:** ATI 2341

**Catalog No.:** 5795

**Batch No.:** 5

CAS Number: 1337878-62-2

## 1. PHYSICAL AND CHEMICAL PROPERTIES

**Batch Molecular Formula:** C<sub>104</sub>H<sub>178</sub>N<sub>26</sub>O<sub>25</sub>S<sub>2</sub>  
**Batch Molecular Weight:** 2256.82  
**Physical Appearance:** White lyophilised solid  
**Net Peptide Content:** 75%  
**Counter Ion:** TFA  
**Solubility:** Soluble to 1 mg/ml in water  
**Storage:** Store at -20°C  
**Peptide Sequence:** Pal-Met-Gly-Tyr-Gln-Lys-Lys-Leu-Arg-Ser-Met-Thr-Asp-Lys-Tyr-Arg-Leu

## 2. ANALYTICAL DATA

**HPLC:** Shows 97.8% purity  
**Mass Spectrum:** Consistent with structure

## 3. AMINO ACID ANALYSIS DATA

Amino Acid Theoretical			Actual		
Ala			Lys	3.00	2.95
Arg	2.00	1.97	Met	2.00	2.00
Asx	1.00	1.00	Phe		
Cys			Pro		
Glx	1.00	1.00	Ser	1.00	1.04
Gly	1.00	1.03	Thr	1.00	1.07
His			Trp		
Ile			Tyr	2.00	2.01
Leu	2.00	1.98	Val		

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

**bio-techne.com**

info@bio-techne.com

techsupport@bio-techne.com

**North America**

Tel: (800) 343 7475

**China**

info.cn@bio-techne.com

Tel: +86 (21) 52380373

**Europe Middle East Africa**

Tel: +44 (0)1235 529449

**Rest of World**

[www.tocris.com/distributors](http://www.tocris.com/distributors)

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**Product Name:** ATI 2341

**Catalog No.:** 5795

**5**

CAS Number: 1337878-62-2

**Description:**

ATI 2341 is a CXCR4 allosteric agonist ( $EC_{50} = 194$  nM). Induces chemotaxis in CXCR4-expressing cells in vitro. Mobilizes polymorphonuclear neutrophils (PMNs) and hematopoietic stem and progenitor cells (HSPCs) from bone marrow niche in vivo. Exhibits biased signaling towards  $G_i$  proteins over  $G_{13}$  and  $\beta$ -arrestin.

**Physical and Chemical Properties:**

Batch Molecular Formula:  $C_{104}H_{178}N_{26}O_{25}S_2$

Batch Molecular Weight: 2256.82

Physical Appearance: White lyophilised solid

**Peptide Sequence:**

**Pal-Met-Gly-Tyr-Gln-Lys-Lys-Leu-Arg-Ser-Met-Thr-Asp-Lys-Tyr-Arg-Leu**

**Storage:** Store at  $-20^{\circ}C$

**Solubility & Usage Info:**

Soluble to 1 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:** 75% (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  $45-60^{\circ}C$  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  $-20^{\circ}C$ . 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  $0.2 \mu m$  filter to remove potential bacterial contamination whenever possible.

**References:**

**Planesas et al** (2015) Studying the binding interactions of allosteric agonists and antagonists of the CXCR4 receptor. *J.Mol.Graph Model.* **60** 1. PMID: 26080355.

**Quoyer et al** (2013) Pepducin targeting the C-X-C chemokine receptor type 4 acts as a biased agonist favoring activation of the inhibitory G protein. *Proc.Natl.Acad.Sci.U.S.A.* **110** E5088. PMID: 24309376.

**Tchernychev et al** (2010) Discovery of a CXCR4 agonist pepducin that mobilizes bone marrow hematopoietic cells. *Proc.Natl.Acad.Sci.U.S.A.* **107** 22255. PMID: 21139054.

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