

Certificate of Analysis

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Product Name: ELA-32 (human)

Catalog No.: 6291

Batch No.: 2

CAS Number: 1680205-79-1

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₁₇₀H₂₈₉N₆₃O₃₉S₄
Batch Molecular Weight: 3967.8
Physical Appearance: White lyophilised solid
Net Peptide Content: 78%
Counter Ion: TFA
Solubility: Soluble to 1 mg/ml in water
Storage: Store at -20°C
Peptide Sequence: Gln-Arg-Pro-Val-Asn-Leu-Thr-Met-Arg-Arg-
 Lys-Leu-Arg-Lys-His-Asn-Cys-Leu-Gln-Arg-
 Arg-Cys-Met-Pro-Leu-His-Ser-Arg-Val-Pro-
 Phe-Pro

2. ANALYTICAL DATA

HPLC: Shows 96% purity
Mass Spectrum: Consistent with structure

3. AMINO ACID ANALYSIS DATA

Amino Acid Theoretical Actual			Amino Acid Theoretical Actual		
Ala			Lys	2.00	1.99
Arg	7.00	6.77	Met	2.00	1.82
Asx	2.00	1.95	Phe	1.00	1.07
Cys			Pro	4.00	3.94
Glx	2.00	1.96	Ser	1.00	1.00
Gly			Thr	1.00	1.04
His	2.00	1.83	Trp		
Ile			Tyr		
Leu	4.00	4.09	Val	2.00	2.07

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

Tel: +1 612 379 2956

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Description:

Potent, high affinity apelin receptor agonist ($IC_{50} = 0.27$ nM; $K_d = 0.51$ nM). Exhibits no binding GPR15 and GPR25. Activates the PI3K/AKT pathway and promotes self-renewal of hESCs via cell-cycle progression and protein translation. Also potentiates the TGF β pathway, priming hESCs toward the endoderm lineage. Stimulates angiogenesis in HUVEC cells. Relaxes mouse aortic vessels. Functions as an anorexigenic hormone through activation of the AVP and CRH neurons in the PVN. Negative control (Cat.No. 6292) also available.

Physical and Chemical Properties:

Batch Molecular Formula: C₁₇₀H₂₈₉N₆₃O₃₉S₄

Batch Molecular Weight: 3967.8

Physical Appearance: White lyophilised solid

Peptide Sequence:

Gln-Arg-Pro-Val-Asn-Leu-Thr-Met-Arg-Arg-

Lys-Leu-Arg-Lys-His-Asn-Cys-Leu-Gln-Arg-

Arg-Cys-Met-Pro-Leu-His-Ser-Arg-Val-Pro-

Phe-Pro

Storage: Store at -20°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: 78% (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 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 μ m filter to remove potential bacterial contamination whenever possible.

Licensing Information:

Sold under agreement from the Agency for Science, Technology and Research (A*STAR), ETPL, and affiliates including the Institute of Medical Biology.

References:

Yang et al (2017) Elabela/Toddler Is an endogenous agonist of the apelin APJ receptor in the adult cardiovascular system, and exogenous administration of the peptide compensates for the downregulation of its expression in pulmonary arterial hypertension. *Circulation* **135** 1160. PMID: 28137936.

Chaves-Almagro et al (2015) Apelin receptors: From signaling to antidiabetic strategy. *Eur.J.Pharmacol.* **763** 149. PMID: 26007641.

Deng et al (2015) Apela Regulates Fluid Homeostasis by Binding to the APJ Receptor to Activate G_i Signaling. *J.Biol.Chem* **290** 18261. PMID: 25995451.

Ho et al (2015) ELABELA Is an Endogenous Growth Factor that Sustains hESC Self-Renewal via the PI3K/AKT Pathway. *Cell Stem Cell* **17** 435. PMID: 26387754.

Santoso et al (2015) Central action of ELABELA reduces food intake and activates arginine vasopressin and corticotropin-releasing hormone neurons in the hypothalamic paraventricular nucleus. *Neuroreport* **26** 820. PMID: 26237243.

Wang et al (2015) Elabela-apelin receptor signaling pathway is functional in mammalian systems. *Sci.Rep.* **5** 8170. PMID: 25639753.

Chng et al (2013) ELABELA: a hormone essential for heart development signals via the apelin receptor. *Dev.Cell* **27** 672. PMID: 24316148.

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