



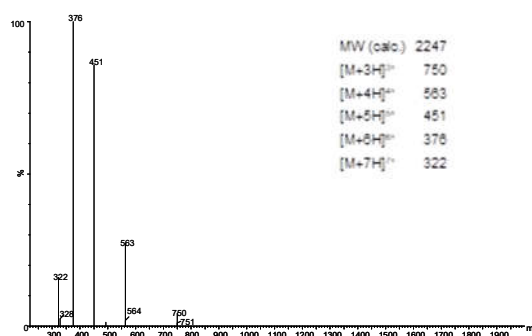
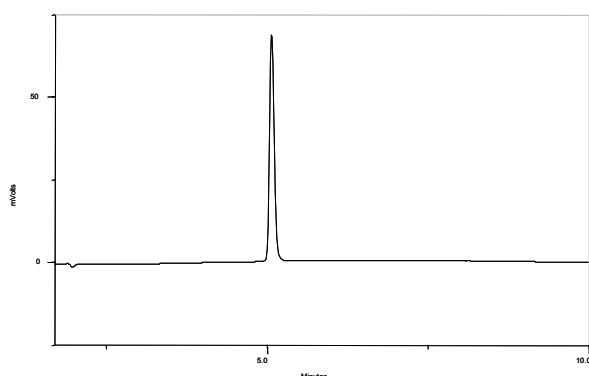
# Cell Penetration Peptide

## Antennapedia peptide (43 - 58)

Product	Cat#	Package size
Antennapedia peptide (43 - 58) (>95% - HPLC 214nm)	P2291.9505	5mg

Sequence (one letter code): RQIKIWFQNRRMKWKK  
Sequence (three letter code): Arg-Gln-Ile-Lys-Ile-Trp-Phe-Gln-Asn-Arg-Arg-Met-Lys-Trp-Lys-Lys  
CAS-No.: 329306-46-9  
Synonym: Penetratin  
Lot No.: E19  
Appearance: lyophilized trifluoroacetate salt (crystalline white powder)  
Delivered: filled in glass vial.

Purified: by RP-HPLC  
Purity: >95% (HPLC, 214nm)  
MW: 2246.8g/mol (C<sub>104</sub>H<sub>168</sub>N<sub>34</sub>O<sub>20</sub>S<sub>1</sub>)



MW (calc.) 2247  
[M+3H]<sup>3+</sup> 760  
[M+4H]<sup>4+</sup> 583  
[M+5H]<sup>5+</sup> 451  
[M+6H]<sup>6+</sup> 376  
[M+7H]<sup>7+</sup> 322

**Shipment and storage:** Shipped: not cooled. Stored at -20°C / Versand: ungekühlt. Wird bei -20°C gelagert.

**Safety Data:** not hazardous / nicht gefährlich



## Description

Cell penetrating peptide (CPPs) are characterised by their ability to promote the receptor-independent cellular uptake of membrane-impermeable macromolecules, such as peptides, proteins, nucleic acids and nanoparticles. CPPs are usually short peptides with less than 30 amino acids. They are mostly amphipathic and highly cationic and usually rich of the amino acids arginine and lysine.

Cellular internalisation of CPPs is observed for virtually all cells, although with different efficiencies that depend on the CPP, the cargo and the cell type (Verdurmen and Brock 2011, Trends Pharmacol. Sci. 32, 116-124).

In drug development, major resources are invested into the development of cellular delivery systems to increase the effectiveness of a large array of potential therapeutics, such as proteins and oligonucleotides. These carriers comprise cell-penetrating peptides (CPPs), cationic lipids and cationic polymers. In recent years, evidence has been accumulating that these carriers not only act as mere pharmacokinetic modifiers but also interfere, with cellular processes in various ways. Reported activities range from an induction of receptor internalization to the generation of reactive oxygen species. Ultimately, cell-penetration molecules with such biological side effects might evolve into new bioactive agents.

According to numerous publications, Antennapedia (43-58) is able to enter cells very efficiently and allow cell membrane transduction of various cargo molecules.

## References:

W.P.R. Verdurmen and R. Brock (2011) Biological responses towards cationic peptides and drug carriers, Trends Pharmacol. Sci. 32, 116-124.

A. Lamazière, F. Burlina, C. Wolf, G. Chassaing, G. Trugnan, et al (2007) Non-Metabolic Membrane Tubulation and Permeability Induced by Bioactive Peptides. PLoS ONE 2(2): e201. Doi:10.1371/journal.pone.0000201

M. Fotin-Mleczek, S. Welte, O. Mader, F. Duchardt, R. Fischer, H. Hufnagel, P. Scheurich, and R. Brock (2005) Cationic cell-penetrating peptides interfere with TNF-signalling by induction of TNF receptor internalization. J Cell Sci. 118, 3339-3351.

D.J. Mitchell, D.T. Kim, L. Steinman, C.G. Fathman, and J.b. Rothbard (2000). Polyarginine enters cells more efficiently than other polycationic homopolymers. J. Peptide Sci. 56, 318-325.

## Reconstitution

The peptide amide is provided as a lyophilized, colourless powder without any additives. It can be shipped at ambient temperature and should be stored at -20° C.

Antennapedia can be reconstituted in water (1mg/mL stock solution). Through the use of a vortex mixer, homogenizer or sonicator, a homogenous solution can be prepared. If you use an ultrasonic bath, take care of the vial labels. After reconstitution, the solution should be aliquoted and stored at or below -20° C.

**Avoid repeated thawing and freezing.**

## Handling

Caution not fully tested. Good laboratory technique should be employed in the safe handling of any lipopeptide product. If you are not fully trained or are unaware of the hazards involved, do not use this compound!

Caution: Do not take internally! Avoid contact by all modes of exposure. Wear appropriate laboratory attire including a lab coat, gloves, mask and safety glasses. Do not mouth pipette, inhale, ingest or allow to come into contact with open wounds. Wash thoroughly any area of the body which comes into contact with the product. Avoid accidental autoinoculation by exercising extreme care when handling in conjunction with any injection device.

## Usage

This product is intended for research purposes by qualified personnel only. It is not intended for use in humans or as a diagnostic agent. Genaxxon bioscience GmbH is not liable for any damages resulting from misuse or handling of this product.