

Product Information

TAT (48-60)

For Research Purposes only. Not for use in Humans



Product	BAP-305
Sequence	GRKKRRQRRRPPQ Gly-Arg-Lys-Lys-Arg-Arg-Gln-Arg-Arg-Arg-Pro-Pro-Gln
Synonyms	HIV TAT (48-60)
MW / Formula	1719.0 / C ₇₀ H ₁₃₁ N ₃₅ O ₁₆
Counter ion	TFA
Description	<p>Cell penetrating peptides (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 amino acids arginine and lysine.</p> <p>In 1988 the first CPP, the HIV-1 Trans-Activator of Transcription (TAT) protein was discovered independently by two laboratories. In 1991, the 60 amino acid Antennapedia homeodomain peptide was shown to enter nerve cells. Three years later it was reported, that a 16 mer peptide corresponding to the third helix of homeodomain, Antennapedia (43-58) is capable to translocate through cell membranes (see BAP-306, Antennapedia (43-58), penetratin).</p> <p>According to numerous publications, HIV TAT (48-60) is able to enter cells very efficiently and allows cell membrane transduction of various cargo molecules.</p>
Packaging Reconstitution Storage	<p>The peptide is provided as a lyophilised, colourless powder without any additives. It can be shipped at ambient temperature and should be stored at -20°C.</p> <p>TAT (48-60) can be reconstituted in water. Through the use of a vortex mixer, homogeniser or sonicator, a homogenous solution can be prepared. If you use an ultrasonic bath, take care of the vial labels.</p> <p>After reconstitution, the solution should be aliquoted and stored at or below -20°C. Repeated thawing and freezing should be avoided.</p>
Handling	<p>Caution, not fully tested. Good laboratory technique should be employed in the safe handling of any peptide product. If you are not fully trained or are unaware of the hazards involved, do not use this compound!</p> <p>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 coming 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.</p> <p>This product is intended for research purposes by qualified personnel only. It is not intended for use in humans or as a diagnostic agent. EMC microcollections GmbH is not liable for any damages resulting from misuse or handling of this product.</p>

Product Information

TAT (48-60)

For Research Purposes only. Not for use in Humans



References

- C. Bechara, S. Sagan (2013) Cell-penetrating peptides: 20 years later, where do we stand? *FEBS Letters* 587, 1693–1702.
- 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.
- E. Vivès, P. Brodin, B. Lebleu (1997) A Truncated HIV-1 Tat Protein Basic Domain Rapidly Translocates through the Plasma Membrane and Accumulates in the Cell Nucleus. *J Biol Chem.* 272, 16010-16017.
- D. Derossi, A. H. Joliot, G. Chassaing, A. Prochiantz (1994) The third helix of the Antennapedia homeodomain translocates through biological membranes. *J. Biol. Chem.* 269, 10444-10450.
- A. Joliot, C. Pernelle, H. Deagostini-Bazin, A. Prochiantz, (1991) Antennapedia homeobox peptide regulates neural morphogenesis. *Proc. Natl. Acad. Sci. USA* 88, 1864–1868.
- M. Green, P.M. Loewenstein (1988) Autonomous functional domains of hemically synthesized human immunodeficiency virus tat trans-activator protein. *Cell* 55, 1179–1188.
- A.D. Frankel, C.O. Pabo (1988) Cellular uptake of the tat protein from human immunodeficiency virus. *Cell* 55, 1189–1193.