

Peptide-Oligonucleotide-Conjugates

Description

Molecules, where the N- or C-terminus of a peptide is covalently linked to the 3'- or 5'-terminus of an oligonucleotide, resulting in general, in a linear peptide-oligonucleotide-conjugate.

Advantages

- facilitate transport of nucleic acids through cell membranes
- enable targeted transport of nucleic acids to cellular compartments (cytoplasm, nucleus, etc.)
- use cellular translocation signals

Applications

- antisense or gene silencing experiments
- *in-situ* hybridization
- targeted direction of nucleic acids into cells

Please see back side for further information!

Product offering

Standard peptide-oligonucleotide-conjugates are HPLC-purified and consist of

	peptide	oligonucleotide
length	6 - 15 amino acids	8 – 40 DNA bases
purity	> 95%	HPLC-purified
coupling via restrictions	N- or C-terminal Cys only one Cys per peptide allowed!	3'- or 5'-terminal aminolink none
modifications	none	combination possible with: - PTO or LNA bases - additional dye modification (such as Fluorescein or Cy3)

Standard peptide-oligonucleotide-conjugates are available in the following synthesis scales

synthesis scale	0.02 µmol	0.04 µmol	0.2 µmol	1.0 µmol
conjugate yield in OD*	1	2	5	10

* optical density at $\lambda = 260$ nm

Please note: Peptides with several Arg and/or Lys residues carry a high positive electric charge. These peptides are likely to interact with the negatively charged DNA backbone, so overall yields of peptide-oligonucleotide-conjugates decrease drastically.

Beside these standard conjugates we offer the following

- coupling of siRNA to peptides
 - coupling of LNA to peptides
 - coupling of single amino acids to oligonucleotides
 - coupling of peptides without Cys to oligonucleotides
 - coupling of peptides with several Cys to oligonucleotides
- please contact us at: services.biopolymers@thermo.com for an individual quotation.

Literature

- Harrison J.G. and Balasubramanian, S., (1998) *Synthesis and hybridization analysis of a small library of peptide-oligonucleotide conjugates*. *Nucleic Acids Res.* Vol. 26, No. 13, pp. 3136-3145.
- Antopolsky M. and Azhaye A., (1999) *Stepwise Solid-Phase Synthesis of Peptide-Oligonucleotide Conjugates on New Solid Supports*. *Helvetica Chimica Acta*, Vol. 82, pp. 2130-2140.
- Zanta M.A., Belguise-Valladier P., Behr J-P., (1999) *Gene delivery: A single nuclear localization signal peptide is sufficient to carry DNA to the cell nucleus*. *PNAS* Vol. 96, pp. 91-96.
- Richard J. et.al., (2003) *Cell-penetrating peptides – A reevaluation of the mechanism of cellular uptake*. *J Biol Chem*, Vol. 278, No. 1, pp. 585-590.
- Astriab-Fisher A. et.al., (2002) *Conjugates of antisense oligonucleotides with the Tat and antennapedia cell-penetrating peptides: effects on cellular uptake, binding to target sequences and biologic actions*. *Pharm Res* 19 (6), pp. 744-754.
- Moulton H.M. and Moulton J.D. (2003) *Peptide-assisted delivery of steric-blocking antisense oligomers*. *Curr Opin Mol Ther.* 5(2), pp. 123-132.
- Gait M.J. (2003) *Peptide-mediated cellular delivery of antisense oligonucleotides and their analogues*. *Cell Mol Life Sci.* 60(5), pp. 844-853.

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