



siRNA Duplexes – for Gene Silencing

Wide Range of siRNA for R&D

From free design tool, various synthesis scales and purifications, key modifiers (e.g. GalNAc, Cholesterol) to a high-level of documentation, Microsynth can cover a wide range of siRNA needs.

Fast Turnaround Times

Single orders of non-modified standard siRNAs are shipped within 3 – 4 days.

Comprehensive Service Rendering

Coverage of the product development process, from R&D to pre-clinical synthesis scales.

Overview

siRNA or Small Interfering Ribonucleic Acid is a double-stranded RNA that is involved in a number of biological processes, in particular RNA interference. RNA interference is a regulatory process used to control and limit the expression of specific genes.

Regulatory active siRNA arises from enzymatic cleavage of longer precursor RNAs by the ribonuclease dicer or is produced through solid-phase chemical synthesis to provide stable, highly pure, and readily modified siRNAs. It consists of two RNA strands, an antisense (or guide) strand and a sense (or passenger) strand, which form a duplex 21 to 25 bp in length including 2 bp (double) 3' overhangs. Since the establishment of the RNAi concept in 1998, siRNA research has seen many ups and downs but has recently experienced a huge boost with the approval of two RNAi-based therapeutics (ONPATRO and GIVLAARI). Advances in chemical modification and delivery brought the field back to a robust and rapidly developing area of research.

The future looks bright since siRNA has

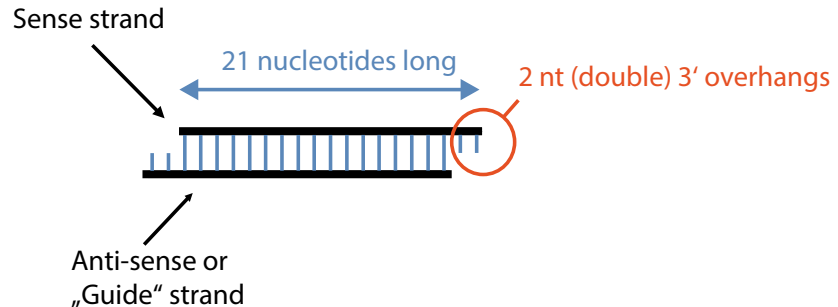


Figure 1: Graphical representation of siRNA duplex molecules.

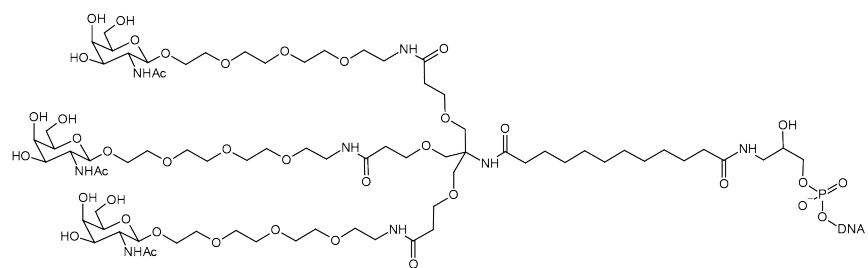


Figure 2: Conjugation of N-acetylgalactosamine (GalNAc) has become a major clinical strategy for delivery of oligonucleotides to hepatocytes (liver cells).

many advantages over small molecule drugs or monoclonal antibodies because siRNA executes its function by complete Watson-Crick base pairing with mRNA

whereas small molecule and antibody drugs need to recognize the complicate spatial confirmation of the targeted protein.

Key Product Specifications

Value	Specification
Length	From 21 to 27 nt
Synthesis scale	0.04 μ mol, 0.2 μ mol, other scales on request
Modifications	3'-(GalNAc), 3' Cholesterol and more
Purifications	Desalted, HPLC, PAGE
Quality control	Online-Trityl monitoring, MALDI-TOF
Format	Standad siRNA: 40 μ M siRNA duplex, liquid, ready-to-use
Packaging	2.0 ml tubes or 96-well plates*
Documentation	Technical data sheet and various CoAs
siRNA design	Via state-of-the-art and easy-to-use siRNA design tool integrated into our online shop
Control siRNA	Various negative and positive controls available upon request
Certification	Manufacturing in an ISO 13485 facility

* on request

Need More Information?

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