

## Custom *in vitro* siRNA Design and Synthesis Services

Two pairs of target gene siRNA (~26 $\mu$ M x 100 $\mu$ l /pair)/\$559

Three pairs of target gene siRNA (~26 $\mu$ M x 100 $\mu$ l /pair)/\$699

Supplied with a negative control siRNA

### Introduction:

Small interfering RNA (also named as short interfering RNA or silencing RNA) (siRNA) is a kind of double-stranded RNA molecules (20-25 nucleotides in length). They are identical to the sequence of target gene. Supplement of the double stranded RNA can suppress the target gene's expression through a process known as RNA interference (RNAi). This post-transcriptional process silences a gene through mRNA inhibition or degradation. siRNA technology is more and more popular method for gene specific inhibition in biomedical research.

Our siRNA synthesis service is based on *in vitro* transcription techniques and the silencer<sup>®</sup> siRNA Construction kit (Ambion). Dependent upon the custom gene sequence we will design two pairs of template oligonucleotides (sense and antisense), which contain 21 nt target gene encoding and a short sequence complementary to the T7 Promoter Primer. These two template oligonucleotides are then hybridized to a T7 Promoter Primer and extended by the Klenow fragment of DNA polymerase to create double-stranded siRNA transcription templates. These sense and antisense siRNA templates are subsequently transcribed by T7 RNA polymerase to create corresponding double-stranded RNA (dsRNA). After modification with single-strand specific ribonuclease and purification with glass fiber filter, the remained sequences with UU at 3'-terminal are the siRNAs. Those oligomers can be directly transfected into target cells to suppress corresponding gene expression.

### Features and Benefits:

- Target gene suppression up to 95%. At least 1 of 3 siRNA provides 80%-95% silencing in most mammalian cells.
- High quality 21-mer siRNA duplex is ready in fast turnaround times.
- Ready-to-use *in vitro* siRNA oligomers can be transfected directly into target cells.

### [Necessary information and materials:]

*Information from customer* : Target protein (gene's name, gene's reference number, or mRNA sequence).

*Transfection reagent*: Lipofectamine 2000 (Invitrogen), Silencer<sup>®</sup> siRNA Transfection II Kit (Ambion), TransIT-TKO (Mirus), SuperFact (Qiagen), or other kind of transfection reagent (such as PEI, etc.)

### [Transfect procedure:]

The best working concentration of the siRNA for transfection is 0.1-10nM. The transfection processes can follow the product manual of the transfection reagent.

Please contact us at following e-mail: [Sam.lee@zmtechscience.com](mailto:Sam.lee@zmtechscience.com) for project quotation and timeline estimate.

