



## Product Information

### MISSION<sup>®</sup> siRNA Human Panels

Catalog Numbers **SI00100–SI17100**

Store at –20 °C

### TECHNICAL BULLETIN

To address the needs of high throughput screening projects, Sigma-Aldrich developed the MISSION siRNA panels that constitute carefully selected gene targets from the Human Druggable Genome Library classified into multiple sub-panels, see Table 1. Grouping of target genes into sub-panels follows standard gene classification tools, e.g., gene ontology and PANTHER. MISSION siRNA panels are designed for all important gene families including kinases, GPCRs, and phosphatases. All siRNA sequences are optimized for targeting efficiency using the best-in-class design algorithm developed by Rosetta Inpharmatics<sup>1,2</sup>.

#### MISSION siRNA Library Format:

- 21mer siRNA duplexes with dTdT overhangs
- 3 individual siRNA duplexes per target gene designed using Rosetta Inpharmatics' design algorithm
- all siRNA duplexes spotted in 96 well microplates with 80 duplexes per plate
- control siRNA sequences included on all plates except SI02100 and SI03200.
- All siRNA duplexes are delivered dry

Description	Targets	Quantity	Catalog Number
MISSION siRNA Human Druggable Genome Library	6650	1 nmol	SI00100
MISSION siRNA Human Ligase Panel	949	1 nmol	SI01100
MISSION siRNA Human Kinase Panel	719	0.25 nmol	SI02100
MISSION siRNA Human Phosphatase Panel	303	0.25 nmol	SI03200
MISSION siRNA Human Growth Factors/Receptors Panel	375	1 nmol	SI04100
MISSION siRNA Human Cell Adhesion and Cytoskeleton Panel	496	1 nmol	SI05100
MISSION siRNA Human Ion Channel and Transporters Panel	639	1 nmol	SI06100
MISSION siRNA Human Assorted Function Panel	228	1 nmol	SI07100
MISSION siRNA Human GPCR Panel	304	1 nmol	SI08100
MISSION siRNA Human Hydrolase Panel	204	1 nmol	SI09100
MISSION siRNA Human Metabolism and Cell Traffic Panel	217	1 nmol	SI10100
MISSION siRNA Human Nucleic Acid Binding Panel	310	1 nmol	SI11100
MISSION siRNA Human Oxidoreductase Panel	338	1 nmol	SI12100
MISSION siRNA Human Protease Panel	379	1 nmol	SI13100
MISSION siRNA Human Cell Surface & Nuclear Receptors Panel	722	1 nmol	SI14100
MISSION siRNA Human Cell Regulation Panel	227	1 nmol	SI15100
MISSION siRNA Human Transfer and Carrier Proteins Panel	71	1 nmol	SI16100
MISSION siRNA Human Transferase Panel	184	1 nmol	SI17100

**Accompanying documents:**

- CD with plate maps, target gene list and full sequence information for the siRNAs
- Technical Bulletin

**Materials required, but not provided**

Water, Molecular Biology Reagent, DNase, RNase, Protease, free, Catalog Number W4502, for resuspension of siRNA duplexes

**Precautions and Disclaimer**

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

**Shipment/Storage**

MISSION siRNA panels are shipped at room temperature. Upon receipt, panels should be stored at  $-20^{\circ}\text{C}$ . Stored under these conditions, MISSION siRNA panels are guaranteed for 6 months.

**Resuspension of siRNA duplexes**

Before removing the thermoseal of the plates, centrifuge each plate at low speed to pellet the dried siRNA at the bottom of each well. To resuspend the dried siRNA pellets, add 100  $\mu\text{L}$  of RNase free water to each well to generate a stock solution of 10  $\mu\text{M}$ . Leave at room temperature for 5 minutes. Then pipette the solution up and down to mix properly. Seal the resuspended plates before storage with the provided AlumaSeals. Store liquid siRNA solutions in small aliquots at  $-20^{\circ}\text{C}$  and keep the number of freeze-thaw cycles to less than 10.

**Handling Instructions**

MISSION siRNA panels are susceptible to RNase and nuclease degradation and need to be handled with special care. Wearing gloves and using RNase free solutions and pipette tips is strongly recommended for all applications. For frequent use of MISSION siRNA panels, we recommend storage in aliquots to avoid repeated freeze-thaw cycles.

**Quality control**

All siRNA duplexes undergo vigorous process monitoring and strict quality control. Single-stranded siRNA oligos are controlled by mass spectrometry. Duplex formation is verified by non-denaturing PAGE. siRNA quantity is systematically validated by UV absorbance at 260 nm.

**Transfection of siRNA duplexes into mammalian cells**

For transfection of siRNAs into mammalian cells, Sigma-Aldrich has developed the N-TER<sup>TM</sup> Nanoparticle siRNA Transfection System, Catalog Number N2913. For optimal transfection efficiency with N-TER Nanoparticle siRNA Transfection System, we recommend screening a range of siRNA concentrations and cell densities. siRNA concentrations of 10-50 nM have been used successfully on a variety of cell lines but lower or higher concentrations may be necessary for specific applications. For more information on this product, please visit our web site under [www.sigma.com/nter](http://www.sigma.com/nter).

**References**

1. Jackson A.L., et al., Widespread siRNA off-target transcript silencing mediated by seed region sequence complementarity. *RNA*, **12**, 1179-1187 (2006)
2. Jackson A.L., et al., Expression profiling reveals off-target gene regulation by RNAi, *Nat Biotechnol.*, **21**, 635-637 (2003).

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MISSION siRNAs are designed under license from Rosetta Inpharmatics

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The N-TER Nanoparticle siRNA Transfection System is manufactured and distributed by Sigma-Aldrich under license from CNRS (France).

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