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ProductInformation

MISSION® siRNA Rat Panels

Catalog Numbers **SI20100-SI37100**

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 Rat 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^{1,2}.

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

All siRNA duplexes are delivered dry with a final quantity of 1 nmol per duplex.

Description	Targets	Quantity	Catalog Number
MISSION siRNA Rat Druggable Genome Library	6025	1 nmol	SI20100
MISSION siRNA Rat Ligase Panel	816	1 nmol	SI21100
MISSION siRNA Rat Kinase Panel	669	1 nmol	SI22100
MISSION siRNA Rat Phosphatase Panel	266	1 nmol	SI23100
MISSION siRNA Rat Growth Factors/Receptors Panel	342	1 nmol	SI24100
MISSION siRNA Rat Cell Adhesion and Cytoskeleton Panel	433	1 nmol	SI25100
MISSION siRNA Rat Ion Channel and Transporters Panel	594	1 nmol	SI26100
MISSION siRNA Rat Assorted Function Panel	210	1 nmol	SI27100
MISSION siRNA Rat GPCR Panel	275	1 nmol	SI28100
MISSION siRNA Rat Hydrolase Panel	188	1 nmol	SI29100
MISSION siRNA Rat Metabolism and Cell Traffic Panel	201	1 nmol	SI30100
MISSION siRNA Rat Nucleic Acid Binding Panel	287	1 nmol	SI31100
MISSION siRNA Rat Oxidoreductase Panel	302	1 nmol	SI32100
MISSION siRNA Rat Protease Panel	341	1 nmol	SI33100
MISSION siRNA Rat Cell Surface & Nuclear Receptors Panel	647	1 nmol	SI34100
MISSION siRNA Rat Cell Regulation Panel	214	1 nmol	SI35100
MISSION siRNA Rat Transfer and Carrier Proteins Panel	66	1 nmol	SI36100
MISSION siRNA Rat Transferase Panel	174	1 nmol	SI37100

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°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 μL of RNase free water to each well to generate a stock solution of 10 μM . 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°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-TERTM Nanoparticle siRNA Transfection System, Catalog Number N0788. 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.

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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