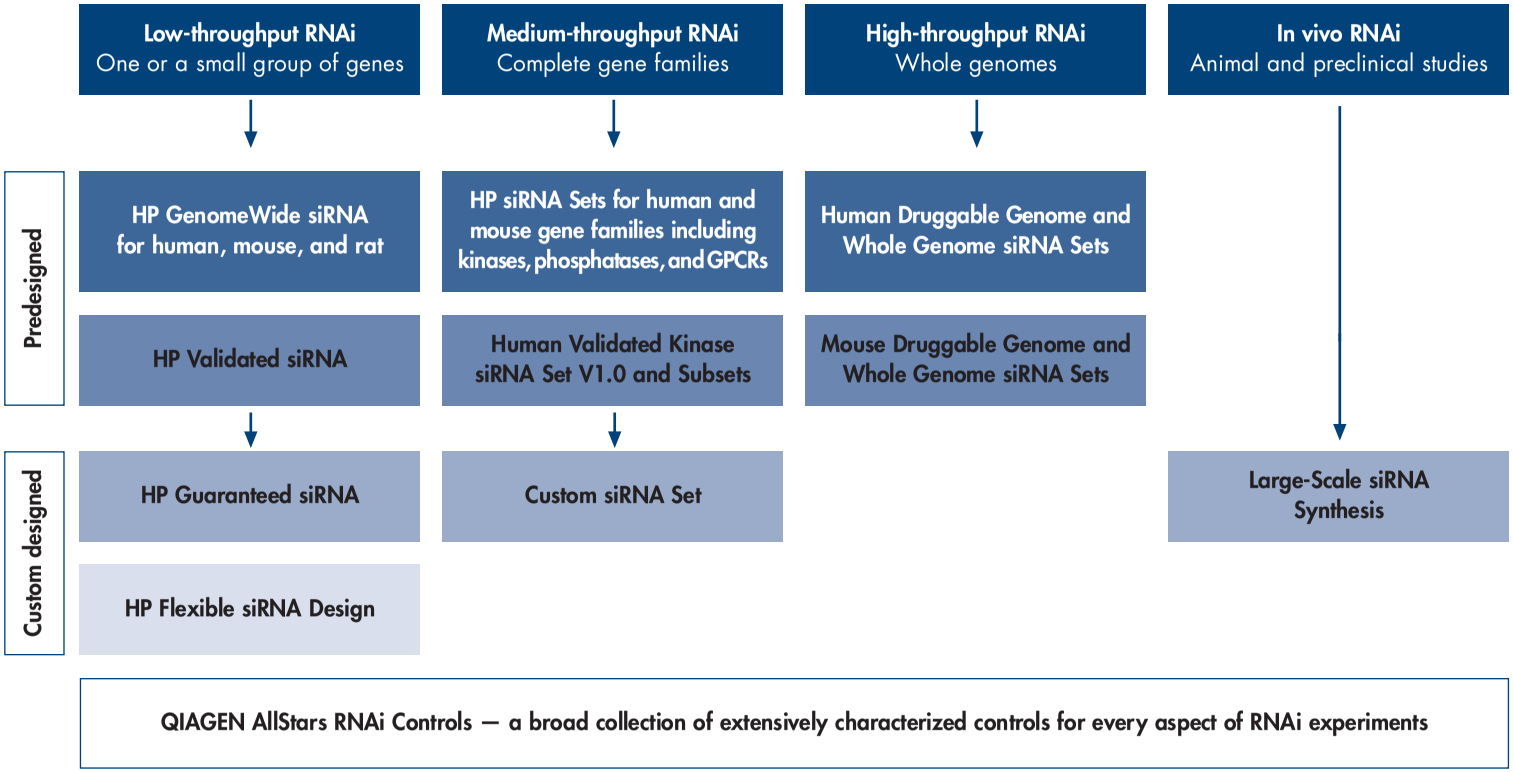
6

RNAi and microRNA research

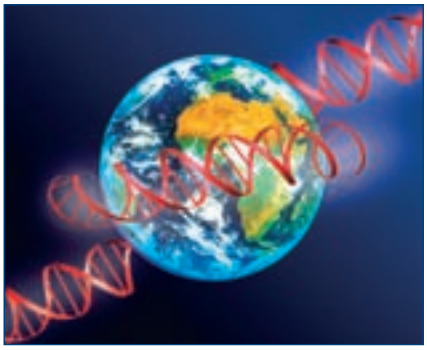
6.6 RNAi controls www.qiagen.com/PG/AllStars

6.7 microRNA www.qiagen.com/PG/miRNA



New to RNAi? Choose the RNAi Human/Mouse Starter Kit, all you need for start-up and optimization experiments.

Convenient Online Ordering



Order HP GenomeWide siRNAs and RNAi solutions online at www.qiagen.com/PG/GeneGlobe.

HP GenomeWide siRNA

For knockdown of all human, mouse, and rat genes using predesigned siRNAs

- Genomewide, predesigned siRNAs for a direct route to successful RNAi
- Ready-to-use, convenient matching solutions available for SYBR® Green based quantitative, real-time RT-PCR (page 192)
- Cost-effective RNAi and downstream analysis
- Convenient online ordering at QIAGEN's GeneGlobe™ Web portal

Product description

HP GenomeWide siRNAs have been designed using the innovative HiPerformance siRNA Design Algorithm and are available for every human, mouse, and rat gene. They can be ordered in 5 nmol and 20 nmol amounts. Modification options include Alexa Fluor®, fluorescein, rhodamine, Cy®3, and Cy5 dyes, amino and thio linkers, and biotin, dabcyl, and phosphate modifications.

Applications

HP GenomeWide siRNAs are highly potent and specific and can be used in RNAi research for:

- Functional genomics
- Pathway analysis
- Gene expression analysis

Product	Contents	Cat. no.
HP GenomeWide siRNA (5 nmol)	Predesigned siRNA for every human, mouse, and rat gene	Varies
HP GenomeWide siRNA (20 nmol)	Predesigned siRNA for every human, mouse, and rat gene; available with a range of fluorescent labels and modification options	Varies

For further information: www.qiagen.com/PG/GeneGlobe

HP Validated siRNA

For proven, efficient target gene knockdown using functionally tested siRNAs

- siRNA tested for functionality saves time and effort
- 2 siRNAs available per target for most genes allowing confirmation of results
- Thousands of HP Validated siRNAs available
- Convenient online ordering at QIAGEN's GeneGlobe Web portal

Product description

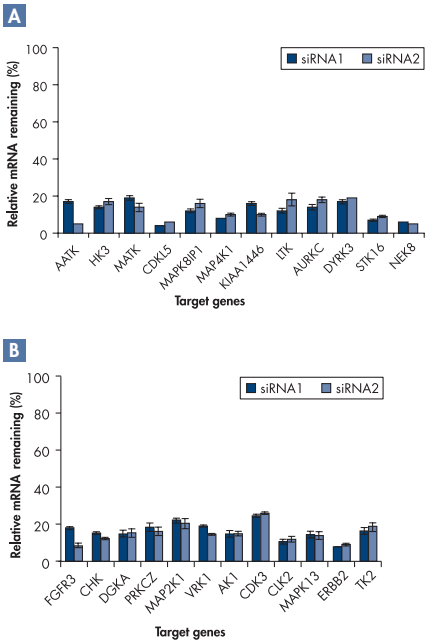
HP Validated siRNAs have been designed using the innovative HiPerformance siRNA Design Algorithm. They have been functionally tested by quantitative, real-time RT-PCR and shown to provide at least 70% knockdown. They are available to target a wide range of human genes and can be ordered in 5 nmol and 20 nmol amounts. Modification options include Alexa Fluor, fluorescein, rhodamine, Cy3, and Cy5 dyes, amino and thio linkers, and biotin, dabcyl, and phosphate modifications.

Applications

HP Validated siRNAs have proven functionality and can be used in RNAi research for:

- Functional genomics
- Pathway analysis
- Gene expression analysis

Proven Knockdown Efficiency

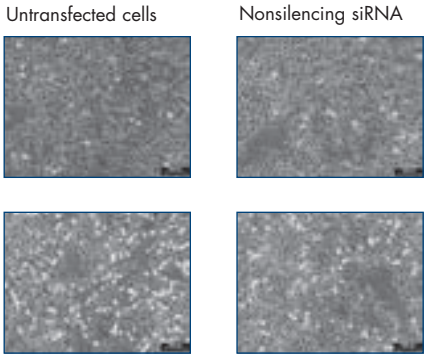


HP Validated siRNAs were transfected into A HeLa S3 or B MCF-7 cells. After 48 hours, target gene knockdown was assessed by quantitative, real-time RT-PCR.

Product	Contents	Cat. no.
HP Validated siRNA (5 nmol)	Predesigned siRNA that has been functionally tested for knockdown efficiency by quantitative, real-time RT-PCR	Varies
HP Validated siRNA (20 nmol)	Predesigned siRNA that has been functionally tested for knockdown efficiency by quantitative, real-time RT-PCR; available with a range of fluorescent labels and modification options	Varies

For further information: www.qiagen.com/PG/GeneGlobe

Confirmation of Phenotype with 2 siRNAs



A549 cells were examined 24 hours after transfection with PLK1 siRNAs or nonsilencing siRNA. PLK1 knockdown characteristically results in the accumulation of rounded, apparently mitotic cells. This phenotype is clearly visible after transfection of each of the 2 siRNAs designed by QIAGEN. (Data kindly provided by Ralph Graeser, Sarah Umber, Michaela Brosig, and Michael H.G. Kubbutat, ProQinase GmbH, Freiburg, Germany.)

HP Guaranteed siRNA

For premium siRNA design and synthesis of 4 potent, specific siRNAs

- Confirmation of phenotype using multiple siRNAs allows off-target effects to be ruled out
- Effective knockdown with the guarantee of 100% satisfaction

Product description

Four potent, specific siRNAs are designed and synthesized for the target gene. HP Guaranteed siRNA provides for specific siRNA requirements, including siRNA for multiple species, specific splice variants, and non-human, -mouse, and -rat genes. Modification options include Alexa Fluor, fluorescein, rhodamine, Cy3, and Cy5 dyes, amino and thio linkers, and biotin, dabcyl, and phosphate modifications. QIAGEN guarantees at least 2 functional siRNAs out of 4, allowing verification of phenotypes.

Applications

HP Guaranteed siRNA ensures 100% satisfaction and can be used in RNAi research for:

- Functional genomics
- Pathway analysis
- Gene expression analysis

Product	Contents	Cat. no.
HP Guaranteed siRNA	Four siRNAs (20 nmol) custom-designed by QIAGEN for a target gene, 100% satisfaction guaranteed	Varies

For further information: www.qiagen.com/PG/siRNA

HP Flexible siRNA Design

For custom design and synthesis or design only of 1–10 siRNAs per target gene

- Cost-effective, optimally designed siRNA
- Versatile options to suit your needs

Product description

HP Flexible siRNA Design provides for specific siRNA requirements, including siRNA for multiple species, specific splice variants, and non-human, -mouse, and -rat genes. There is a choice of design only or design and synthesis for up to 10 siRNAs per target gene. Modification options include Alexa Fluor, fluorescein, rhodamine, Cy3, and Cy5 dyes, amino and thio linkers, and biotin, dabcyl, and phosphate modifications. A limited, one-time replacement guarantee is provided.

Applications

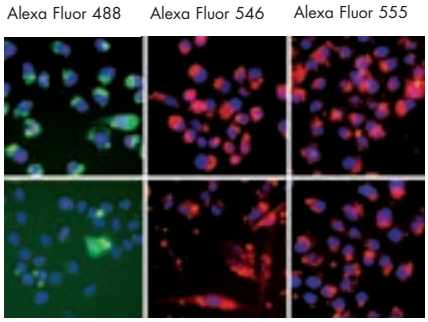
HP Flexible siRNA Design is a versatile option that can be used in RNAi research for:

- Functional genomics
- Pathway analysis
- Gene expression analysis

Product	Contents	Cat. no.
HP Flexible siRNA Design	Design only or design and synthesis (20 nmol or 40 nmol) of 1–10 siRNAs for a target gene	Varies

For further information: www.qiagen.com/PG/siRNA

Alexa Fluor Dyes Provide Brightest Fluorescence



Fluorescence microscopy of HeLa S3 cells 24 hours after transfection with 100 nM HPP Grade siRNA labeled at the 3' end with different fluorescent dyes.

HPP Grade siRNA Synthesis

For efficient gene silencing using highly pure siRNA at various scales and with a range of modification options

- High-purity siRNA at an economical price
- High-throughput synthesis and purification ensure short turnaround times
- Highly photostable and bright Alexa Fluor labels available
- Option of a range of modifications and fluorescent labels

Product description

HPP Grade siRNA Synthesis provides highly pure siRNA. Modification options include Alexa Fluor, fluorescein, rhodamine, Cy3, and Cy5 dyes, amino and thio linkers, and biotin, dabcyl, and phosphate modifications.

Applications

HPP Grade siRNA can be used for a variety of applications, including:

- Functional genomics
- Monitoring transfection efficiency and cell-tracking experiments

Product	Contents	Cat. no.
HPP Grade siRNA	Ready-to-use siRNA purified to >90%; available in 20 nmol or 40 nmol amounts and in 96-well plates	Varies
Fluorescently labeled HPP Grade siRNA	20 nmol HPP Grade siRNA, available with a range of fluorescent labels, including Alexa Fluor 488, Alexa Fluor 546, Alexa Fluor 555, Alexa Fluor 647, Cy3, Cy5, fluorescein, or rhodamine dyes	Varies
HPP Grade siRNA with modifications	20 nmol HPP Grade siRNA, available with a range of modifications, including amino linkers, thio linkers, and biotin, dabcyl, and phosphate modifications	Varies

For further information: www.qiagen.com/PG/siRNA

High-Throughput HPP Grade siRNA Synthesis

HPP Grade siRNA synthesized in 96-well plates for high-throughput projects

- High-quality HPP Grade siRNA is >90% pure
- Quality documented by mass spectroscopy
- siRNA annealed and ready to use

Product description

High-Throughput HPP Grade siRNA Synthesis provides high-purity siRNA in 96-well plates for high-throughput RNAi experiments.

Applications

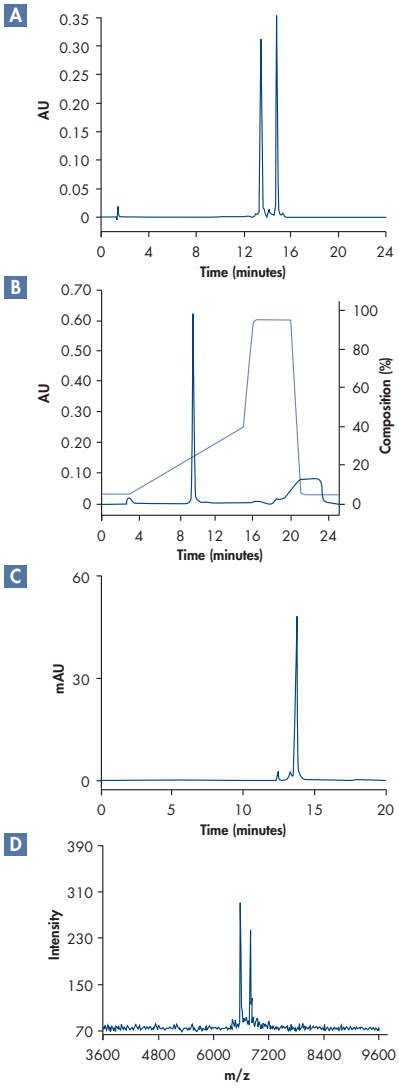
Efficient production of high-quality siRNA is critical for success in high-throughput RNAi experiments. All stages of synthesis and production of HPP Grade siRNA duplexes are performed in 96-well plates using robotic sample handling, ensuring consistent yields of highly pure siRNA. Highly pure HPP Grade siRNA enables efficient gene silencing in eukaryotic cell culture for:

- Functional genomics research
- Gene expression studies
- Array analysis

Product	Contents	Cat. no.
HPP Grade siRNA, in 96-well plates	Ready-to-use siRNA purified to >90%; available in 20 nmol or 40 nmol amounts in 96-well plates	Varies

For further information: www.qiagen.com/PG/siRNA

Extensive Quality Control of Large-Scale siRNA



New Large-Scale siRNA Synthesis

For in vivo animal studies and preclinical applications using 10 mg to 10 g siRNA

- Flexible options of a variety of scales and modifications
- High-purity siRNA with low endotoxin levels assured by comprehensive quality control
- Your trusted supplier providing expertise in large-scale synthesis

Product description

Large-Scale siRNA Synthesis from QIAGEN provides highly pure siRNA at a variety of scales ranging from 10 mg to 10 g for use in research and preclinical applications. Modification options include cholesterol, phosphate, amino hexyl, FITC, 3' OMe, 2' OMe, phosphorothiate, fluoropyrimidine, riboT, ribo inosine, biotin, and various dye labels. siRNA is purified by HPLC and is >90% pure. The availability of high-quality siRNA at large scales is essential for research into therapeutic uses of RNAi and in vivo animal studies.

Applications

- In vivo animal studies
- Preclinical applications

Quality control procedures performed after Large-Scale siRNA Synthesis include A denaturing ion-exchange HPLC B native reversed-phase HPLC C capillary gel electrophoresis and D MALDI-TOF analysis.

Product	Contents	Cat. no.
Large-Scale siRNA	Highly pure siRNA at a range of scales from 10 mg to 10 g	Varies
Large-Scale siRNA with modifications	Highly pure siRNA available with a range of modifications and labeling options, including cholesterol and 2'-O-methoxy	Varies

For further information: www.qiagen.com/PG/Largescale

New Human Whole Genome siRNA Set V1.0

For screening the human genome

- High knockdown and minimal off-target effects using the HiPerformance siRNA Design Algorithm
- Faster discovery using off-the-shelf siRNAs for all human genes
- Flexible formats including modules, pools, and different scales

Product description

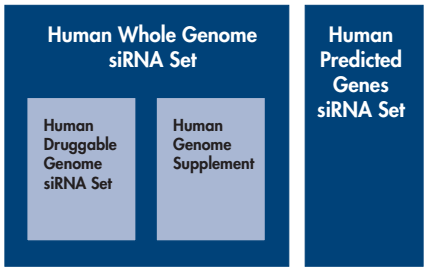
The Human Whole Genome siRNA Set V1.0 enables gene silencing studies of ~17,000 genes. It is a powerful tool for target identification and validation by high-throughput RNAi. siRNAs are designed using the HiPerformance siRNA Design Algorithm which incorporates an innovative neural-network–based design algorithm licensed from Novartis, a stringent homology analysis tool developed at QIAGEN, and an up-to-date, internally curated, nonredundant sequence database.
All sets are provided with complete siRNA sequence disclosure at no extra cost.

Applications

- Elucidation of cellular pathways
- Screening for target discovery
- Functional genomics

The Human Whole Genome and Human Predicted Genes siRNA Sets, and Human Genome Supplement V1.0 are intended for research use. No claim or representation is intended to provide information for the diagnosis, prevention or treatment of a disease.

Set Modules



Human Genome Set Formats

Individual siRNAs	2 per gene (0.25 or 1.0 nmol)
	4 per gene (0.25 or 1.0 nmol)
Pooled siRNAs	2 per gene (0.5 nmol total)
	4 per gene (1.0 nmol total)

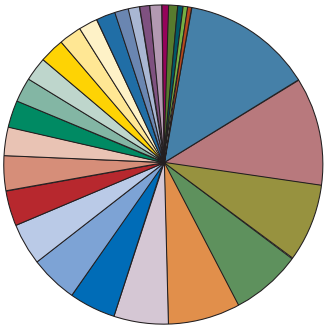
A variety of modules, formats, and scales are available for maximum flexibility.

Product	Contents	Cat. no.
Human Whole Genome siRNA Set V1.0	siRNAs targeting ~17,000 known human genes (NM genes) from the RefSeq database	Inquire
Human Predicted Genes siRNA Set V1.0	siRNAs targeting ~5000 predicted genes (XM genes) from the RefSeq database	Inquire
Human Genome Supplement V1.0	siRNAs targeting ~10,000 genes from the Human Whole Genome siRNA Set that are not included in the Human Druggable Genome siRNA Set V2.0	Inquire

For the Human Druggable Genome siRNA Set, see page 226. For siRNA sets targeting the rat genome, please inquire.

For further information: www.qiagen.com/PG/siRNAsets

Composition of the Human Druggable Genome siRNA Set V2.0



Molecular function categories of all the genes targeted by siRNAs in the Human Druggable Genome siRNA Set V2.0.

Human Druggable Genome siRNA Set V2.0

For screening large numbers of human druggable genes using RNAi

- Innovative design maximizes potency and minimizes off-target effects
- Off-the-shelf siRNAs targeting a wide range of genes
- Flexible formats of 2 or 4 individual siRNAs or pools of siRNAs

Product description

The Human Druggable Genome siRNA Set V2.0 is the second generation siRNA set specific for druggable targets. This comprehensive discovery tool enables gene silencing studies of 6992 potential human druggable targets.

Applications

Using a large set of siRNAs targeting genes in the major druggable families allows:

- Elucidation of cellular pathways
- Screening for target discovery
- Functional genomics

The Human Druggable Genome siRNA Set is intended for research use. No claim or representation is intended to provide information for the diagnosis, prevention or treatment of a disease.

Product	Contents	Cat. no.
Human Druggable Genome siRNA Set V2.0	siRNAs targeting 6992 human druggable genes; available with 2 or 4 siRNAs per gene (0.25 nmol or 1 nmol) or pools of 2 (0.5 nmol total) or 4 siRNAs (1 nmol total)	Inquire

For siRNA sets targeting the rat genome, please inquire.

For further information: www.qiagen.com/PG/siRNAsets

New Human GPCR siRNA Set V2.0

For RNAi screening of human GPCRs

- siRNA duplexes targeting 495 GPCR genes for accelerated research by high-throughput screening
- Highly potent siRNA generated using the world's best siRNA design algorithm
- Flexible formats allow the choice of 2 or 4 individual siRNAs or pools for each target

Product description

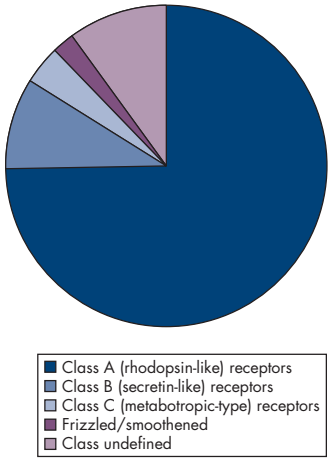
The Human GPCR siRNA Set enables streamlined high-throughput RNAi screening of 495 G protein-coupled receptor genes. It is a powerful tool for target identification and validation by high-throughput RNAi. siRNAs in the Human GPCR siRNA Set V2.0 are designed using the HiPerformance siRNA Design Algorithm which incorporates an innovative neural-network–based design algorithm licensed from Novartis, a stringent homology analysis tool developed at QIAGEN, and an up-to-date, internally curated, nonredundant sequence database.

Applications

As the use of RNAi becomes more widespread in the therapeutic discovery and target validation process, there is a growing interest in high-throughput RNAi analysis of drug-target genes. GPCRs are a major target for the pharmaceutical industry, with more than 50% of all drugs available today acting on GPCRs.

The Human GPCR siRNA siRNA Set is intended for research use. No claim or representation is intended to provide information for the diagnosis, prevention or treatment of a disease.

Human GPCR siRNA Set V2.0 Composition

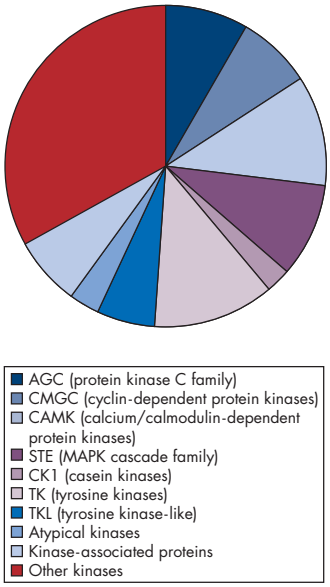


Makeup of the Human GPCR siRNA Set V2.0.

Product	Contents	Cat. no.
Human GPCR siRNA Set V2.0	siRNAs targeting 495 human G protein-coupled receptor genes; available with 2 or 4 siRNAs per gene (0.25 nmol or 1 nmol) or pools of 2 (0.5 nmol total) or 4 siRNAs (1 nmol total)	Inquire

For further information: www.qiagen.com/PG/siRNAsets

Human Kinase siRNA Set V2.0 Composition



Makeup of the Human Kinase siRNA Set.

New Human Kinase siRNA Set V2.0

For RNAi screening of human kinases

- siRNA duplexes targeting 691 kinase genes for accelerated research by high-throughput screening
- Highly potent siRNA generated using the world's best siRNA design algorithm
- Flexible formats allow the choice of 2 or 4 individual siRNAs or pools for each target

Product description

The Human Kinase siRNA Set enables streamlined high-throughput RNAi screening of 691 kinase and kinase-associated genes. It is a powerful tool for target identification and validation by high-throughput RNAi (1). siRNAs in the Human Kinase siRNA Set V2.0 are designed using the HiPerformance siRNA Design Algorithm which incorporates an innovative neural-network–based design algorithm licensed from Novartis, a stringent homology analysis tool developed at QIAGEN, and an up-to-date, internally curated, nonredundant sequence database.

Applications

As the use of RNAi becomes more widespread in the therapeutic discovery and target validation process, there is a growing interest in high-throughput RNAi analysis of drug-target genes. Kinases are attractive drug targets as their dysfunction can result in a variety of diseases, such as cancer, diabetes, and heart disease.

The Human Kinase siRNA Set is intended for research use. No claim or representation is intended to provide information for the diagnosis, prevention or treatment of a disease.

1. MacKeigan, J.P. et al. (2005) Sensitized RNAi screen of human kinases and phosphatases identifies new regulators of apoptosis and chemoresistance. Nat. Cell Biol. **7**, 591.

Product	Contents	Cat. no.
Human Kinase siRNA Set V2.0	siRNAs targeting 691 human kinase and kinase-associated genes; available with 2 or 4 siRNAs per gene (0.25 nmol or 1 nmol) or pools of 2 (0.5 nmol total) or 4 siRNAs (1 nmol total)	Inquire

For further information: www.qiagen.com/PG/siRNAsets

New Human Phosphatase siRNA Set V2.0

For RNAi screening of human phosphatase and phosphatase-associated genes

- siRNA duplexes targeting 206 phosphatase genes for accelerated research by high-throughput screening
- Highly potent siRNA generated using the world's best siRNA design algorithm
- Flexible formats allow the choice of 2 or 4 individual siRNAs or pools for each target

Product description

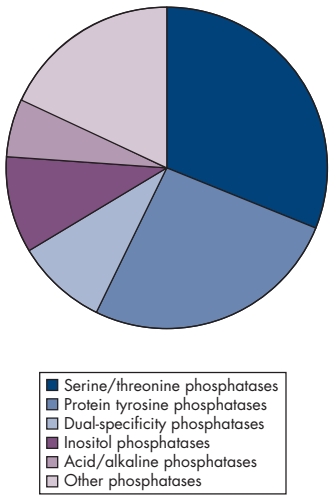
The Human Phosphatase siRNA Set enables streamlined high-throughput RNAi screening of 206 phosphatase and phosphatase-associated genes. It is a powerful tool for target identification and validation by high-throughput RNAi (1). siRNAs in the Human Phosphatase siRNA Set V2.0 are designed using the HiPerformance siRNA Design Algorithm which incorporates an innovative neural-network–based design algorithm licensed from Novartis, a stringent homology analysis tool developed at QIAGEN, and an up-to-date, internally curated, nonredundant sequence database.

Applications

As the use of RNAi becomes more widespread in the therapeutic discovery process, there is a growing interest in high-throughput RNAi analysis of drug-target genes. Phosphatases are potential therapeutic targets due to their important role in signal transduction in many important biological pathways.

The Human Phosphatase siRNA Set is intended for research use. No claim or representation is intended to provide information for the diagnosis, prevention or treatment of a disease.

Human Phosphatase siRNA Set V2.0 Composition



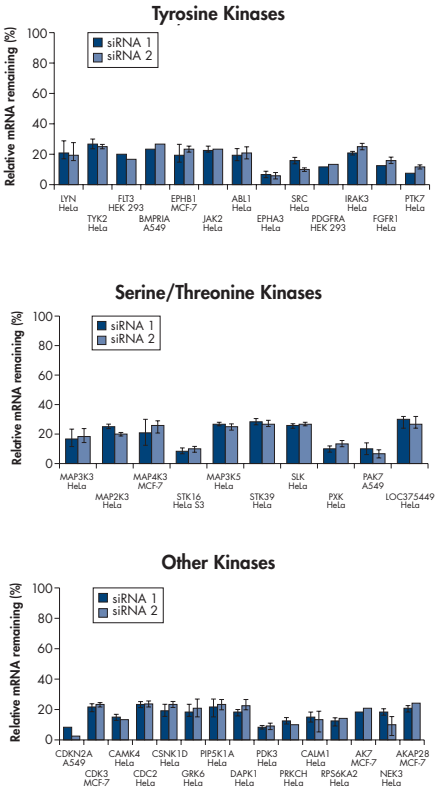
Makeup of the Human Phosphatase siRNA Set. Each segment includes phosphatases and phosphatase-related proteins.

1. MacKeigan, J.P. et al. (2005) Sensitized RNAi screen of human kinases and phosphatases identifies new regulators of apoptosis and chemoresistance. Nat. Cell Biol. **7**, 591.

Product	Contents	Cat. no.
Human Phosphatase siRNA Set V2.0	siRNAs targeting 206 human phosphatase and phosphatase-associated genes; available with 2 or 4 siRNAs per gene (0.25 nmol or 1 nmol) or pools of 2 (0.5 nmol total) or 4 siRNAs (1 nmol total)	Inquire

For further information: www.qiagen.com/PG/siRNAsets

High Knockdown of Kinase Genes



Kinase siRNAs were transfected into various cell lines. After 48 hours, target gene expression was assessed by quantitative, real-time RT-PCR.

New Human Validated Kinase siRNA Set V1.0 and Subsets

For faster RNAi results with proven knockdown

- Proven knockdown using functionally tested siRNAs
- Broadest coverage of kinase genes
- Flexible formats including subsets and different scales for economical screening

Product description

This unique siRNA set is a result of the world's largest siRNA validation project in which QIAGEN scientists have verified ≥70% target gene knockdown for thousands of siRNAs targeting human genes. A range of scales and subsets are available providing flexibility to suit every lab's research requirements and making RNAi screening more economical and accessible than ever before.

Applications

- Functional genomics of kinases
- Drug discovery

The Human Validated Kinase siRNA Set and Subsets are intended for research use. No claim or representation is intended to provide information for the diagnosis, prevention or treatment of a disease.

Product	Contents	Cat. no.
Human Validated Kinase siRNA Set V1.0	Functionally tested siRNAs targeting 588 kinase genes, up to 2 siRNAs (1 nmol, 0.25 nmol, or 0.1 nmol) or 1 siRNA (1 nmol, 0.25 nmol, or 0.1 nmol) for each gene	Inquire
Human Validated Tyrosine Kinase siRNA Subset	Functionally tested siRNAs targeting ~102 tyrosine kinase genes, up to 2 siRNAs (1 nmol, 0.25 nmol, or 0.1 nmol) for each gene	Inquire
Human Validated Ser/Thr Kinase siRNA Subset	Functionally tested siRNAs targeting ~42 serine/threonine kinase genes, up to 2 siRNAs (1 nmol, 0.25 nmol, or 0.1 nmol) for each gene	Inquire

For further information: www.qiagen.com/PG/siRNAsets

New Mouse Whole Genome siRNA Set V1.0 and Subsets

For accessible high-throughput RNAi screening of the mouse genome

- Flexible formats including modules, individual siRNAs or pools, and different scales
- High and specific knockdown using the innovative HiPerformance siRNA Design Algorithm
- Faster discovery using off-the-shelf siRNAs targeting the whole range of mouse genes

Product description

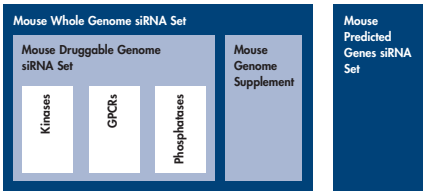
The Mouse Whole Genome siRNA Set is a powerful and flexible tool for drug discovery using high-throughput RNAi for ~17,000 mouse genes. siRNAs are designed using the HiPerformance siRNA Design Algorithm which incorporates an innovative neural-network–based design algorithm licensed from Novartis, a stringent homology analysis tool developed at QIAGEN, and an up-to-date, internally curated, nonredundant sequence database. A variety of modules, formats, and scales are available (see figure and table). All sets are provided with complete siRNA sequence disclosure at no extra cost.

For siRNA sets targeting the rat genome, please inquire.

Applications

- Elucidation of cellular pathways
- Screening for target discovery
- Functional genomics

Set Modules



Mouse Genome Set Formats

Individual siRNAs	2 per gene (0.25 or 1.0 nmol)
	4 per gene (0.25 or 1.0 nmol)
Pooled siRNAs	2 per gene (0.5 nmol total)
	4 per gene (1.0 nmol total)

Product	Contents	Cat. no.
Mouse Whole Genome siRNA Set V1.0	siRNAs targeting ~17,000 known mouse genes (NM genes) from the RefSeq database	Inquire
Mouse Predicted Genes siRNA Set V1.0	siRNAs targeting ~5300 predicted mouse genes (XM genes) from the RefSeq database	Inquire
Mouse Druggable Genome siRNA Set V1.0	siRNAs targeting 8353 mouse druggable genes	Inquire
Mouse Genome Supplement V1.0	siRNAs targeting ~8700 genes (genes from the Mouse Whole Genome siRNA Set that are not included in the Mouse Druggable Genome siRNA Set)	Inquire
Mouse Kinase siRNA Set V1.0	siRNAs targeting 762 mouse kinase genes	Inquire
Mouse Phosphatase siRNA Set V1.0	siRNAs targeting 294 mouse phosphatase genes	Inquire
Mouse GPCR siRNA Set V1.0	siRNAs targeting 397 mouse G protein-coupled receptor genes	Inquire

For further information: www.qiagen.com/PG/siRNAsets

Custom siRNA Set

For RNAi screening of customer-specified genes

- Flexibility to choose target genes
- siRNA predesigned or custom designed for specific requirements
- Highly potent siRNA generated using the world's best siRNA design algorithm

Product description

Custom siRNA Sets are available in 5 nmol and 20 nmol amounts, and in 96-well plates or in tubes. siRNAs are designed using the HiPerformance algorithm ensuring highly effective gene knockdown. siRNAs are either predesigned (from QIAGEN's GeneGlobe Web portal) or custom designed for specific requirements. For smaller scales and any number of siRNAs targeting any number of customer-specified genes, please inquire.

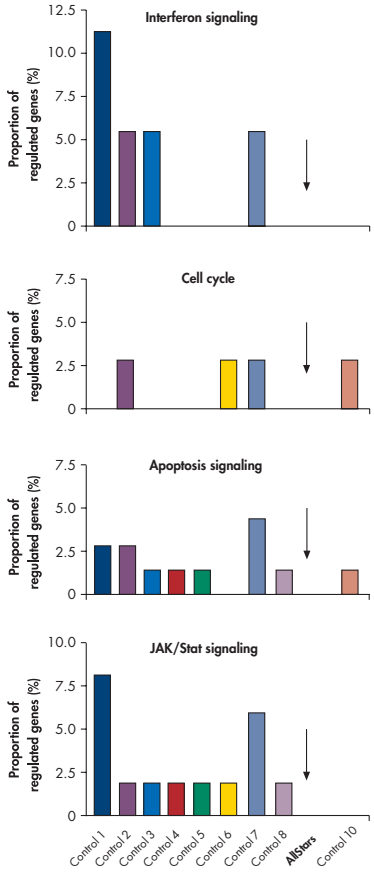
Applications

As the use of RNAi becomes more widespread in the therapeutic discovery and target validation process, there has been a growing interest in medium- and high-throughput RNAi analysis. Custom siRNA Sets enable customers to construct their own set of siRNA duplexes for RNAi screening of a number of gene targets, for drug discovery and pathway analysis.

Product	Contents	Cat. no.
Custom siRNA Set	Set of siRNAs (5 nmol or 20 nmol) targeting customer-specified genes; predesigned siRNAs (from GeneGlobe) or custom-designed siRNAs	Inquire

For further information: www.qiagen.com/PG/siRNAsets

Low Nonspecific Effects on Expression Using AllStars Negative Control siRNA



Multiple negative control siRNAs (Control 1–Control 10) were transfected in triplicate into MCF-7 cells. Genomewide expression analysis was performed using Affymetrix® human U133 GeneChip® arrays. AllStars Negative Control siRNA (indicated with arrow) resulted in the lowest number of regulated genes. In contrast, other control siRNAs resulted in higher numbers of regulated genes from important cellular pathways. For more details, visit www.qiagen.com/PG/AllStars .

New QIAGEN® AllStars RNAi Controls

For RNAi experiments, a broad collection of extensively characterized controls

- A broad range of RNAi controls
- Reliable interpretation of RNAi data using the most thoroughly tested and validated negative control siRNA available
- Easy to select from a highly informative Web portal

Product description

QIAGEN AllStars RNAi Controls are a comprehensive collection of the most extensively tested controls for every aspect of RNAi experiments in human, mouse, and rat (see table). AllStars Negative Control siRNA has been extensively tested using genomewide expression analysis and cell-based assays and shown to provide minimal nonspecific effects (see figure).

Applications

- All routine RNAi experiments
- Start-up RNAi experiments
- High-throughput RNAi screening

Range of RNAi Controls

AllStars RNAi Controls	Description
AllStars Transfection Controls	siRNAs for monitoring transfection efficiency
AllStars Positive Controls	Routine positive controls including a new control siRNA for rat
AllStars Negative Control siRNA	Thoroughly tested nonsilencing siRNA
AllStars Reporter Controls	siRNAs targeting reporter assay genes
AllStars Downstream Controls	Real-time RT-PCR assays for quantification of gene expression
AllStars Interferon Controls	Real-time RT-PCR assays for SYBR Green based detection of interferon-induced genes

Product	Contents	Cat. no.
QIAGEN AllStars RNAi Controls	Positive, negative, transfection, downstream, interferon, and reporter controls	Varies

For further information: www.qiagen.com/PG/AllStars

RNAi Human/Mouse Starter Kit

For transfection optimization, control RNAi experiments, and easy establishment of RNAi

- A complete set of controls to establish and optimize RNAi
- High transfection efficiency with low siRNA concentrations using HiPerFect Reagent
- Convenient monitoring of transfection efficiency using Alexa Fluor 488 labeled nonsilencing siRNA
- Flexibility in knockdown validation using additional tools from QIAGEN for western blot or quantitative, real-time RT-PCR analysis (pages 308 and 192)

Product description

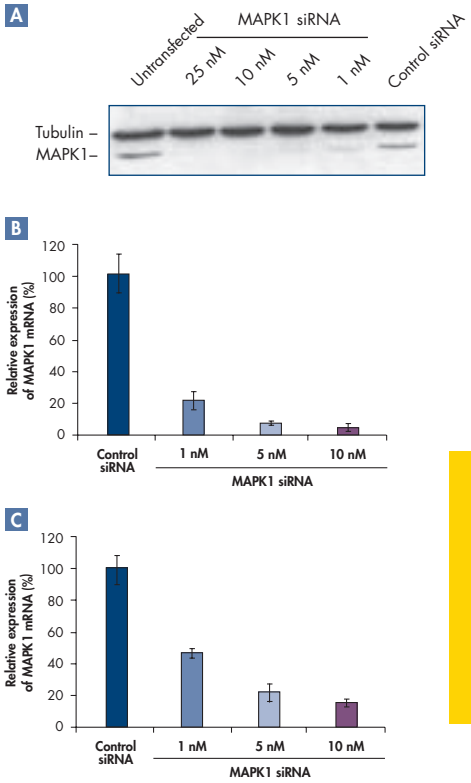
The RNAi Human/Mouse Starter Kit allows easy establishment of siRNA-mediated RNAi, optimization of transfection conditions, and routine control experiments. It includes an Alexa Fluor 488 labeled nonsilencing siRNA, a MAPK1 positive control siRNA, and HiPerFect Transfection Reagent.

Applications

The RNAi Human/Mouse Starter Kit is used for RNAi experiments in human and mouse cells for:

- Establishment of RNAi in initial experiments or for a new cell line
- Transfection optimization
- Routine control experiments

Gene Silencing Using MAPK1 Positive Control siRNA

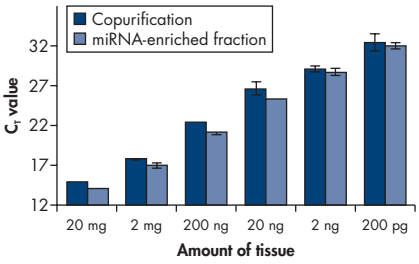


A and B MCF-7 and C NIH/3T3 cells were transfected with different concentrations of positive control siRNA targeted against MAPK1 mRNA or with nonsilencing siRNA (**Control siRNA**) using HiPerFect Transfection Reagent. After transfection and incubation, A protein expression was determined by western blot analysis. Blots were probed using MAPK1-specific Tag-100 antibody and anti-tubulin primary antibody. Untransfected cells were also analyzed. B and C Knockdown was also analyzed by quantitative, real-time RT-PCR using the human or mouse QuantiTect® Gene Expression Assay and the QuantiTect Probe RT-PCR Kit.

Product	Contents	Cat. no.
RNAi Human/Mouse Starter Kit	0.5 ml HiPerFect Transfection Reagent, siRNA Suspension Buffer, Nonsilencing Control siRNA (Alexa Fluor 488 Labeled), Hs/Mm_MAPK1 Control siRNA	301799

For further information: www.qiagen.com/PG/RNAikit

Efficient miRNA Purification



Total RNA was purified from a dilution series of rat lung tissue homogenate from 20 mg to 200 pg using the miRNeasy Mini Kit. miRNA–enriched fractions (<200 nt) were also isolated from the same samples. Purified RNA was used as a template in quantitative, real-time RT-PCR assays for the miRNA miR-16.

New miRNeasy Mini Kit

For purification of microRNA and total RNA from a wide range of animal tissues and cells

- Effective purification of total RNA including miRNA from a wide range of animal tissues and cells
- Efficient enrichment of miRNA and RNAs <200 nucleotides
- High-purity RNA suitable for all downstream applications
- Flexible protocols for copurification or isolation of separate fractions

Product description

The miRNeasy Mini Kit enables purification of total RNA which includes RNA from 18 nucleotides (nt) upwards from a wide range of animal tissues and cells, including difficult-to-lyse tissues. Alternatively, an miRNA-enriched fraction and a total RNA (>200 nt) fraction can be purified separately. The miRNeasy Mini Kit is used for low-throughput RNA purification using spin columns.

Applications

The miRNeasy Mini Kit allows purification of miRNA with total RNA for use in a variety of applications, including:

- Northern blot analysis
- Quantitative, real-time RT-PCR
- Microarray analysis

The miRNeasy Mini Kit is intended for research use. No claim or representation is intended to provide information for the diagnosis, prevention, or treatment of a disease.

Product	Contents	Cat. no.
miRNeasy Mini Kit (50)	For 50 preps: 50 RNeasy® Mini Spin Columns, Collection Tubes (1.5 ml and 2 ml), QIAzol Lysis Reagent, RNase-free Reagents and Buffers	217004

For further information: www.qiagen.com/PG/miRNA

New miRNeasy 96 Kit

For purification of microRNA and total RNA from a wide range of animal tissues and cells

- Effective purification of total RNA including miRNA from a wide range of animal tissues and cells
- Efficient enrichment of miRNA and RNAs <200 nucleotides
- High-purity RNA suitable for all downstream applications
- Flexible protocols for copurification or isolation of separate fractions

Product description

The miRNeasy 96 Kit enables purification of total RNA which includes RNA from 18 nucleotides (nt) upwards from a wide range of animal tissues and cells, including difficult-to-lyse tissues. Alternatively, an miRNA-enriched fraction and a total RNA (>200 nt) fraction can be can be purified separately. The miRNeasy 96 Kit enables high-throughput purification in a 96-well format, and is the first 96-well format kit for miRNA purification.

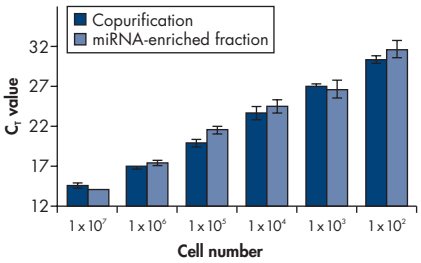
Applications

The miRNeasy 96 Kit allows high-throughput purification of miRNA with total RNA for use in a variety of applications, including:

- Northern blot analysis
- Quantitative, real-time RT-PCR
- Microarray analysis

The miRNeasy 96 Kit is intended for research use. No claim or representation is intended to provide information for the diagnosis, prevention, or treatment of a disease.

Effective Purification from a Range of Starting Amounts



Total RNA was purified from 10^2–10^7 Jurkat cells using the miRNeasy 96 Kit. miRNA–enriched fractions (<200 nt) were also isolated from the same samples. Purified RNA was used as a template in quantitative, real-time RT-PCR assays for the miRNA miR-16.

Product	Contents	Cat. no.
miRNeasy 96 Kit (4)	For 4 x 96 preps: 4 RNeasy 96 plates, Collection Microtubes (racked), Elution Microtubes CL, Caps, S-Blocks, AirPore Tape Sheets, QIAzol Lysis Reagent, RNase-Free Reagents and Buffers	217061

For further information: www.qiagen.com/PG/miRNA