

siRNA Products and Services

Custom siRNA synthesis and a wide array of pre-made and/or predesigned siRNAs with exceptionally high knockdown rates and low off-target effects.



With Bioneer custom and pre-made siRNA, silence is golden—guaranteed!*

- High knockdown rates with 2 of three siRNAs suppressing target mRNA levels >80%
- Unique design algorithm dramatically reduces off-target effects
- Pre-designed, pathway specific and pre-validated libraries available
- Custom synthesis with free siRNA design

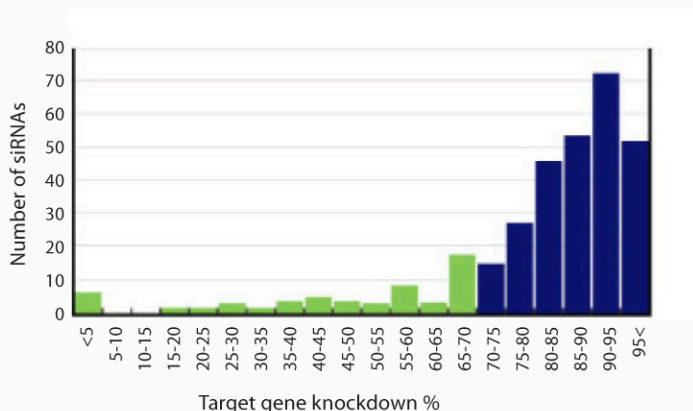


Fig 1. Knockdown efficiency of AccuTarget® genome-wide predesigned siRNA. HeLa cells were transfected with siRNAs at 100 nM.

Discover the Bioneer advantage

Gene silencing by RNA interference (RNAi) technology using small interfering RNA (siRNA) is a powerful tool for studying functional genomics, drug target identification and validation, pathway elucidation, and therapeutic development. siRNA is a short piece of double-stranded RNA about 21-nucleotides-long. When transfected into cells, siRNAs associate with a nuclease complex and form the RNA-induced silencing complex (RISC). The siRNA duplex is subsequently unwound by the helicase in the RISC via an ATP-dependent process. The single stranded RNA subsequently binds to the target mRNA and the Ago-2 protein in the RISC cleaves the target mRNA which is then degraded.

The Bioneer advantage is in the algorithm we use for siRNA design. Our Turbo si-Designer software identifies highly effective siRNA target sites with remarkably high knockdown rates. Critical parameters including base composition, thermodynamic instability and base preference are all considered in the design algorithm. siRNAs spanning SNP sites are removed and finally, non-specific siRNAs are eliminated following homology searching by BLAST and Smith-Waterman algorithms. The result is an siRNA with extraordinary knockdown efficiency, and minimal off-target effects.

The performance of Turbo si-Designer has been extensively evaluated by testing the knockdown efficiency of thousands of siRNAs targeting STE Kinases, TK Kinases, genes involved in the NF-kappaB and Caspase Pathways using Real-time PCR analysis. The results of the evaluation indicated the Bioneer's design algorithm was highly effective in selecting effective siRNAs; 80% of the tested siRNAs showed > 70% knockdown and 38% elicited knockdown of > 90%.

*See Bioneer's siRNA guarantee on page 2.

Bioneer offers a wide range of *AccuTarget*[™] siRNA products with exceptionally high knockdown rates and low off-target effects.

- Genome wide predesigned siRNA library
- Premade siRNA library
- Validated siRNA library
- qPCR primer library for SYBR Green
- Custom siRNA service

Genome-wide Predesigned siRNA

Bioneer offers over 132,000 predesigned siRNAs for more than 44,000 target genes from human, mouse and rat. Search our extensive library of siRNAs by Gene ID, Name, Synonyms, Description, or Refseq Accession No. Once you find your gene of interest, choose your synthesis scale and purification level, and check your predicted knockdown efficiency. You can even order your qPCR primers for knockdown validation. Convenient and easy ordering—only from Bioneer.

Genome-wide predesigned siRNA

Human	<i>AccuTarget</i> human genome-wide predesigned siRNA set (17863 Genes)
Mouse	<i>AccuTarget</i> mouse genome-wide predesigned siRNA set (17114 Genes)
Rat	<i>AccuTarget</i> rat genome-wide predesigned siRNA set (9386 genes)

AccuTarget[™] Control siRNA

Bioneer also provides a wide range of positive control siRNAs, negative control siRNAs and control siRNA sets. Control siRNA can be fluorescently labeled for monitoring transfection efficiency. (Fig 2, Fig 3)

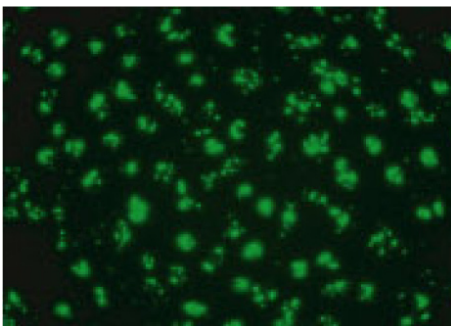


Fig 2. HeLa cells that were successfully transfected with FITC-labeled siRNA observed by confocal microscopy.

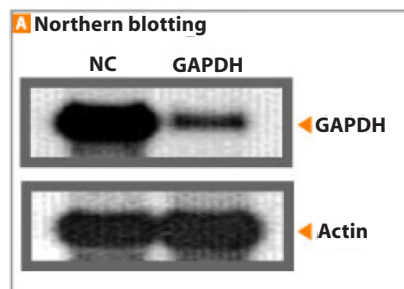
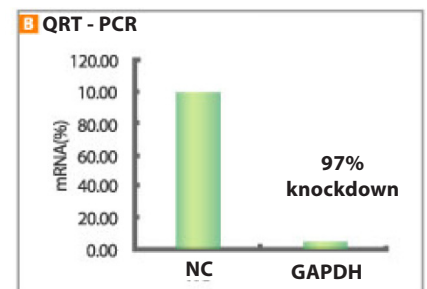


Fig 3. Knockdown efficiency comparison of positive GAPDH siRNA and negative control siRNA. Knockdown efficiency was determined by Northern Blot and Real-time PCR.



Premade and Premade/Validated siRNA Libraries

Bioneer offers the *AccuTarget*[™] Human Premade siRNA set which contains 8,456 predesigned and manufactured siRNAs for immediate use in your experiments. These predesigned siRNAs are available at 10 and 20 nmol guaranteed yield.

We also offer 25 pathway specific siRNA libraries for researchers studying cellular processes, cancer, disease, etc. These are available at 0.1 nmol and 0.5 nmol guaranteed yield. (See Table 1)

Finally there are 21 pre-validated libraries most with knockdown rates >80%. (Fig 4) Validated siRNAs can be ordered at 10, 20, 50, or 100 nmole scale. (See Table 2)

Bioneer offers qPCR primers and primer sets for validation of gene knockdown levels. Whether you buy an individual siRNA, or one of our many libraries, we can provide you with the appropriate primers to test each siRNA's knockdown. Note that primers are for SYBR green based PCR.

Table 1: *AccuTarget* siRNA Library, human pathway

1. Antioxidant : 38	14. Lyase : 123
2. Apoptosis : 290	15. Motor : 122
3. Cancer : 1158	16. NF-kB pathway : 37
4. Caspase : 37	17. Nucleic acid binding : 2589
5. Cell cycle : 112	18. Oxidoreductase : 551
6. Cyclase : 22	19. Peptidase : 495
7. Cytochrome P450 : 52	20. Phosphatase : 188
8. Deaminase : 22	21. Receptor : 1526
9. GPCR signaling pathway : 732	22. Transferase : 1431
10. Helicase : 115	23. Transporter : 1023
11. Isomerase : 104	24. Tubulin : 20
12. Kinase : 700	25. Ubiquitin : 77
13. Ligase : 272	

Table 2: *AccuTarget* Validated siRNA Library, human pathway

1. Cancer : 466	12. Caspase : 18
2. Apoptosis : 208	13. Transporter : 17
3. Nucleic acid binding : 144	14. Oxidoreductase : 15
4. Phosphatase : 119	15. Lyase : 8
5. Transferase : 117	16. Helicase : 8
6. Cell cycle : 107	17. Ubiquitin : 5
7. Kinase : 104	18. GPCR signaling pathway : 5
8. Receptor : 53	19. Motor : 4
9. NF-kB pathway : 34	20. Isomerase : 4
10. Ligase : 27	21. Antioxidant : 2
11. Peptidase : 27	

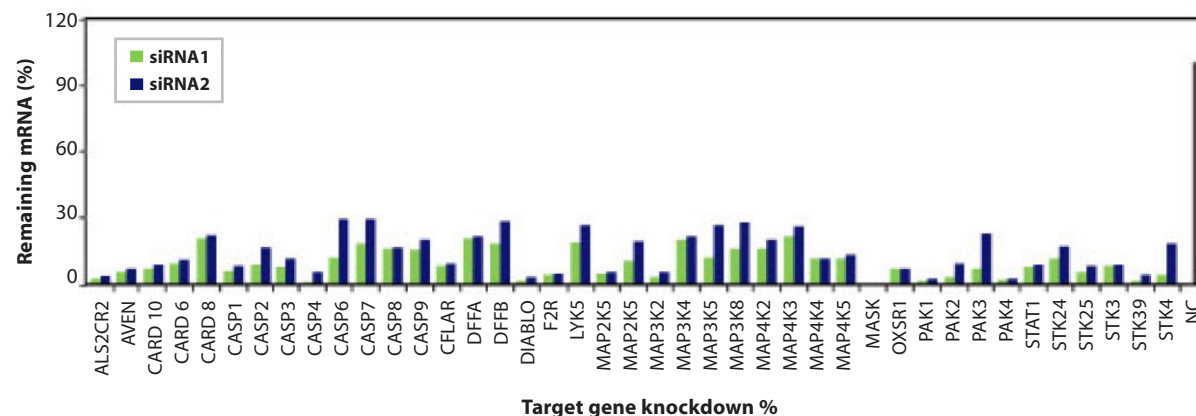


Fig 4. Knockdown efficiency of *AccuTarget* Validated siRNAs.

Custom siRNA Service

Let Bioneer design your siRNA with Turbo si-Designer. Up to a 30-mer siRNA including a choice of up to 32 different 3' modifications can be ordered at each scale (1, 5, 10, 20, 50 and 100 nmol guaranteed yields) with no charge for the siRNA design. Each siRNA synthesized by Bioneer is purified to near HPLC purity utilizing the company's proprietary Bio-RP purification system. For higher purity, HPLC is offered at an additional charge. The siRNA is supplied lyophilized and ready-to-use for your convenience.

Each siRNA is quality controlled by MALDI-TOF mass spectrometry to guarantee highest quality and analyzed by PAGE to confirm its duplex structure. Bioneer offers 7 different 5' modifications: Fluorescein, Phosphorylation, Biotin, Amine, Thiol, TAMRA and PEG 2000. Bioneer also offers 9 different 3' modifications: Fluorescein, Phosphorylation, Biotin, Amine, TAMRA, Dabcyl, Thiol, Cholesterol and PEG 2000. Four internal modifications are also available: DNA, 2'-O-Me, Inosine and Deoxy-base. All Bioneer's siRNA products are manufactured in a state-of-the-art clean room.

Ordering Information

Cat. No.	Guaranteed nmole	Purification	Price
Predesigned siRNA (Human, Mouse and Rat)			
SDO-1005	1 nmole	Bio-RP	\$50.00
SDO-1006	5 nmole	Bio-RP	\$95.00
SDO-1001	10 nmole	Bio-RP	\$180.00
SDO-1002	20 nmole	Bio-RP	\$230.00
SDO-1003	50 nmole	Bio-RP	\$350.00
SDO-1004	100 nmole	Bio-RP	\$410.00
SDH-1005	1 nmole	HPLC	\$90.00
SDH-1006	5 nmole	HPLC	\$170.00
SDH-1001	10 nmole	HPLC	\$300.00
SDH-1002	20 nmole	HPLC	\$410.00
SDH-1003	50 nmole	HPLC	\$500.00
SDH-1004	100 nmole	HPLC	\$540.00
Validated siRNA (Human)			
SV-1006	1 nmole	Bio-RP	\$125.00
SV-1007	5 nmole	Bio-RP	\$237.00
SV-1001	10 nmole	Bio-RP	\$450.00
SV-1002	20 nmole	Bio-RP	\$575.00
SV-1003	50 nmole	Bio-RP	\$875.00
SV-1004	100 nmole	Bio-RP	\$1,250.00
SV-1015	1 nmole	HPLC	\$225.00
SV-1016	5 nmole	HPLC	\$425.00
SV-1011	10 nmole	HPLC	\$625.00
SV-1012	20 nmole	HPLC	\$909.00
SV-1013	50 nmole	HPLC	\$1,439.00
SV-1014	100 nmole	HPLC	\$2,046.00
Positive Control siRNA - Human GAPDH			
SP-1004	1 nmole	Bio-RP	\$40.00
SP-1001	5 nmole	Bio-RP	\$76.00
SP-1002	10 nmole	Bio-RP	\$144.00
SP-1003	20 nmole	Bio-RP	\$190.00
SP-1005	50 nmole	Bio-RP	280.00
SP-1014	1 nmole	HPLC	\$72.00
SP-1011	5 nmole	HPLC	\$135.00
SP-1012	10 nmole	HPLC	\$189.00
SP-1013	20 nmole	HPLC	\$280.00
SP-1015	50 nmole	HPLC	\$350.00
Positive Control siRNA - GFP			
SP-2004	1 nmole	Bio-RP	\$40.00
SP-2001	5 nmole	Bio-RP	\$76.00
SP-2002	10 nmole	Bio-RP	\$144.00
SP-2003	20 nmole	Bio-RP	\$190.00
SP-2005	50 nmole	BIO-RP	\$280.00
SP-2014	1 nmole	HPLC	\$72.00
SP-2011	5 nmole	HPLC	\$135.00
SP-2012	10 nmole	HPLC	\$189.00
SP-2013	20 nmole	HPLC	\$280.00
SP-2015	50 nmole	HPLC	\$350.00

Cat. No.	Guaranteed nmole	Purification	Price
Positive Control siRNA - Luciferase			
SP-3004	1 nmole	Bio-RP	\$40.00
SP-3001	5 nmole	Bio-RP	\$76.00
SP-3002	10 nmole	Bio-RP	\$144.00
SP-3003	20 nmole	Bio-RP	\$190.00
SP-3005	50 nmole	BIO-RP	\$280.00
SP-3014	1 nmole	HPLC	\$72.00
SP-3011	5 nmole	HPLC	\$135.00
SP-3012	10 nmole	HPLC	\$189.00
SP-3013	20 nmole	HPLC	\$280.00
SP-3015	50 nmole	HPLC	\$350.00
Negative Control siRNA			
SN-1004	1 nmole	Bio-RP	\$40.00
SN-1001	5 nmole	Bio-RP	\$76.00
SN-1002	10 nmole	Bio-RP	\$144.00
SN-1003	20 nmole	Bio-RP	\$190.00
SN-1005	50 nmole	BIO-RP	\$280.00
SN-1014	1 nmole	HPLC	\$72.00
SN-1011	5 nmole	HPLC	\$135.00
SN-1012	10 nmole	HPLC	\$189.00
SN-1013	20 nmole	HPLC	\$280.00
SN-1015	50 nmole	HPLC	\$350.00
Fluorescein labeled Negative Control siRNA			
SN-1024	1 nmole	HPLC	\$86.00
SN-1021	5 nmole	HPLC	\$168.00
SN-1022	10 nmole	HPLC	\$258.00
SN-1023	20 nmole	HPLC	\$345.00
SN-1025	50 nmole	HPLC	\$420.00
Control siRNA Set - GAPDH			
SS-1001	Positive 5 / Negative 2 nmole	Bio-RP	\$140.00
SS-1011	Positive 5 / Negative 2 nmole	HPLC	\$168.00
Control siRNA Set - GFP			
SS-1002	Positive 5 / Negative 2 nmole	Bio-RP	\$140.00
SS-1012	Positive 5 / Negative 2 nmole	HPLC	\$168.00
Control siRNA Set - Luciferase			
SS-1003	Positive 5 / Negative 2 nmole	Bio-RP	\$140.00
SS-1013	Positive 5 / Negative 2 nmole	HPLC	\$168.00
Control siRNA Synthesis			
S-1017-1	10 nmole	Bio-RP	\$180.00
S-1017-2	20 nmole	Bio-RP	\$230.00
S-1017-3	50 nmole	Bio-RP	\$350.00
S-1017-4	100 nmole	BioRP	\$410.00
S-1018-1	10 nmole	HPLC	\$300.00
S-1018-2	20 nmole	HPLC	\$410.00
S-1018-3	50 nmole	HPLC	\$500.00
S-1018-4	100 nmole	HPLC	\$540.00

Order online at <http://us.bioneer.com/siRNA>

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