siRNA Prodcuts

1- **ON-TARGETplus siRNA**
Off-targets reduced by up to 90% compared to unmodified siRNA.
Guaranteed silencing by SMARTpool and 3 of 4 individual siRNAs.
Sequence information provided with siRNA purchase.

2- **siGENOME siRNA**
Guaranteed knockdown by SMARTpool and 3 of 4 individual siRNAs
Rational strand bias approach to promote effective silencing and reduce sense strand off-targeting
Sequence information provided with siRNA purchase.

3- **Accell siRNA**
Accell siRNA enters cells without the need for transfection reagents, virus (or viral vectors), or instruments.
Novel siRNA modifications facilitate uptake, stability, specificity and knockdown efficiency.
Proven performance in neuronal, immunological, primary, and other difficult-to-transfect cell types.

4- **Lincode siRNA**
Lincode siRNAs have been created to support the growing interest in analysis of long noncoding RNAs (lncRNA).
Lincode siRNAs are designed with the SMARTselection algorithm to ensure high-efficiency silencing.
The Lincode siRNA product line targets human and mouse noncoding RNA genes

microRNA prodcuts

1- **miRIDIAN microRNA Mimics**
Superior performance in comparison to native, double-stranded microRNA
Highly effective mimic of endogenous mature microRNA function
Preferential programming of RISC with active strand of microRNA
Exclusion of passenger strand through proprietary chemical modification pattern

2- **miRIDIAN microRNA Hairpin Inhibitors**
Most effective inhibition of endogenous mature microRNA function by means of proprietary design
Patent-pending molecule combines chemical modifications and completely novel secondary structure motif
Enhanced potency and longevity allows for multiplexed microRNA inhibition at very low nanomolar concentrations and with minimal toxicity

3- **shMIMIC Lentiviral microRNA**
Patented expression scaffold for consistent and correct processing of the mature microRNA
Your choice of seven different constitutive promoters to optimize microRNA expression in your cells
Design modifications promote preferential loading of the mature microRNA into RISC and robust function

High-titer, concentrated lentiviral particles permits delivery into cells refractory to lipid-based delivery
Expression of TurboGFP or Turbo RFP (Evrogen, Moscow) allows visualization of transduction efficiency

4- **shMIMIC Inducible Lentiviral microRNA**
Unique, patent-pending expression scaffold for consistent and correct processing of the mature microRNA
Universal primary context ensures that each mature microRNA is correctly and consistently processed
Design modifications promote preferential loading of the mature microRNA into RISC and robust function
Tight control of shMIMIC microRNA and reporter gene expression utilizing the latest generation Tet-inducible expression technology, the Tet-On® 3G Inducible System
Unsurpassed flexibility conferred by the SMARTchoice suite of vector options maximizes success in a broad spectrum of cell types and applications
High-titer, concentrated lentiviral particles permits delivery into cells refractory to lipid-based delivery

shRNA Prodcuts

1- **SMARTvector Lentiviral shRNA & SMARTvector Inducible Lentiviral shRNA**
Target any gene in human, mouse and rat, and tailor experiments to specific cells with multiple promoter options
Guaranteed silencing
Designed using microRNA scaffold-specific attributes for highly efficient processing via the endogenous RNAi pathway
Delivered as purified, concentrated lentiviral particles
Standard titers of 1 x 108 TU/mL, ± 20%, and ultra-high titers of 5 x 109 TU/mL, ± 20%; functional titers determined by flow cytometric analysis of GFP-positive, transduced HEK293T cells
Suitable for dividing and non-dividing cell types, including difficult-to-transfect cells such as primary, neuronal and stem cells

2- **GIPZ Lentiviral shRNA**
microRNA-adapted shRNA for specific knockdown
TurboGFP marks cells expressing shRNA
Genome-wide human and mouse representation
Lentiviral delivery extends RNAi to primary and non-dividing cells
Generation and maintenance of stable cell lines facilitated by puromycin selection marker

1- NEB® PCR Cloning Kit

This PCR Cloning Kit contains an optimized 2X Cloning Master Mix with a proprietary ligation enhancer and a linearized vector that uses a novel mechanism for background colony suppression to give a low background.

It allows simple and quick cloning of any PCR amplicon, whether the amplification reactions are performed with proofreading DNA polymerases, such as Q5® or Phusion® which produce blunt ends; or nonproofreading DNA polymerases, such as Taq or Taq mixes (OneTaq®, LongAmp™ Taq) which produce single base overhangs. The kit also allows direct cloning from amplification reactions without purification, and works well whether or not the primers used in the PCR possess 5´-phosphate groups.

2- NEBuilder® HiFi DNA Assembly Cloning Kit

NEBuilder HiFi DNA Assembly Cloning Kit was developed to improve the efficiency and accuracy of DNA assembly.

This method allows for seamless assembly of multiple DNA fragments, regardless of fragment length or end compatibility.

This method has been used to assemble either single-stranded oligonucleotides or different sizes of DNA fragments with varied overlaps (15–80 bp).

It has utility for the synthetic biology community, as well as those interested in one-step cloning of multiple fragments due to its ease of use, flexibility and simple master-mix format.

3- DNA Plasmids

common and specialized DNA plasmids for use in cloning experiments and applications such as protein expression, gene expression, and cellular analysis.

M13mp18 RF I DNA
M13mp18 Single-stranded DNA
pBR322 Vector
pCLIPf Vector
pCLuc Mini-TK 2 Vector
pCLuc-Basic 2 Vector
pCMV-CLuc 2 Control Plasmid
pCMV-GLuc 2 Control Plasmid
pGLuc Mini-TK 2 Vector
pGLuc-Basic 2 Vector
pKLAC2 Vector
pMAL-c5X Vector
pMAL-p5X Vector
pNEB206A Linearized Vector
pSNAPf Vector
pSNAP-tag® (T7)-2 Vector
pSV40-CLuc Control Plasmid
pTK-CLuc Vector
pTK-GLuc Vector
pTXB1 Vector
pTYB21 Vector
pUC19 Vector
ΦX174 RF I DNA
ΦX174 RF II DNA
ΦX174 Virion DNA

4- DNA Ligases

enzymes for molecular biology that deliver; our highly pure enzymes, over 250 of which are recombinant, offer exceptional performance and value.
Thermostable 5´ AppDNA/RNA Ligase
E. coli DNA Ligase
Taq DNA Ligase
Taq DNA Ligase Reaction Buffer
9°N™ DNA Ligase
Blunt/TA Ligase Master Mix
ElectroLigase®
Instant Sticky-end Ligase Master Mix
NEBNext® Quick Ligation Module
Quick Blunting™ and Quick Ligation™ Kits
Quick Ligation™ Kit
SplintR® Ligase
T3 DNA Ligase
T4 DNA Ligase
T4 DNA Ligase Reaction Buffer
T7 DNA Ligase

5- Restriction enzymes

Over 205 restriction enzymes are 100% active in a single buffer – CutSmart™ Buffer.
1900 restriction enzymes are Time-Saver qualified, meaning you can digest DNA in 5-15 minutes, or digest DNA safely overnight.
RE-Mix® Restriction Enzyme Master Mixes require only the addition of DNA and water – it's that simple!
Choose from 280 restriction enzymes, the largest selection commercially available.
Choose a High-Fidelity (HF®) restriction enzyme, which has been engineered for reduced star activity, rapid digestion (5-15 minutes) and 100% activity in CutSmart Buffer. A vial of 6X Purple Load Dye is included with every HF restriction enzyme.
All of our restriction enzymes undergo stringent quality control testing, ensuring the highest levels of purity and lot-to-lot consistency.

6- BioLux® Cypridina Luciferase Assay Kit

The BioLux Cypridina Luciferase Assay Kit contains the reagents necessary for assaying Cypridina Luciferase activity.
This luciferase does not require ATP and catalyzes the oxidation of its luciferin substrate in a photochemical reaction

7- BioLux® Gaussia Luciferase Assay Kit

The BioLux® Gaussia Luciferase Assay Kit contains the reagents necessary for assaying Gaussia Luciferase (GLuc) activity, most commonly from cell culture supernatants.
Gaussia Luciferase can be expressed in mammalian cells using reporter plasmids available from NEB

8- Q5® Site-Directed Mutagenesis Kit

The Q5® Site-Directed Mutagenesis Kit enables rapid, site-specific mutagenesis of double-stranded plasmid DNA in less than 2 hours

The kit utilizes the robust Q5 Hot Start High-Fidelity DNA Polymerase along with custom mutagenic primers to create insertions, deletions and substitutions in a wide variety of plasmids.
Transformation into high-efficiency NEB 5-alpha Competent E. coli, provided with the kit, ensures robust results with plasmids up to at least 20 kb in length.

9- IMPACT™ Kit

The IMPACT (Intein Mediated Purification with an Affinity Chitin-binding Tag) system is a novel protein purification system which utilizes the inducible self-cleavage activity of protein splicing elements (termed inteins) to separate the target protein from the affinity tag
It distinguishes itself from all other purification systems by its ability to purify, in a single chromatographic step, a native recombinant protein without the use of a protease.

10- K. lactis Protein Expression Kit

The K. lactis Expression Kit provides an easy method for expressing a gene of interest in the yeast Kluyveromyces lactis
K. lactis has been used to produce proteins at industrial scale in the food industry for over a decade due to its ability to rapidly achieve high culture densities and abundantly produce recombinant proteins
yeast expression is driven by a variant of the strongLAC4 promoter that has been modified to lack background expression in E. coli
the kit includes highly competent K. lactis cells making the technology easy-to-use for those not accustomed to working with yeast. Their high transformation efficiency makes the system suitable for methods that require large numbers of transformants, for example, expression cloning using cDNA libraries.
K. lactis have access to eukaryotic protein folding and glycosylation machinery that E. coli cells do not possess, making it an important alternative to bacterial expression systems.

11- PURExpress® Δ (aa, tRNA) Kit & PURExpress® Δ Ribosome Kit & PURExpress® Δ RF123 Kit

A rapid method for gene expression analysis, PURExpress® is a novel cell-free transcription/translation system reconstituted from the purified components necessary for E. coli translation.
The relative nuclease-free and protease-free nature of the PURExpress platform preserves the integrity of DNA and RNA templates/ complexes and results in proteins that are free of modification and degradation.
Transcription and translation are carried out in a one-step reaction, and require the mixing of only two tubes. With results available in a few hours, PURExpress saves valuable laboratory time and is ideal for high throughput technologies.

12- EpiMark® Nucleosome Assembly Kit

The EpiMark® Nucleosome Assembly Kit is used to make unmodified recombinant human nucleosomes with user-supplied DNA or the provided control DNA.

13- EpiMark® Methylated DNA Enrichment Kit

The EpiMark® Methylated DNA Enrichment Kit will selectively bind and enrich double-stranded methyl-CpG DNA from fragmented genomic DNA with as little as 5 ng of input DNA.

14- EpiMark® 5-hmC and 5-mC Analysis Kit

The EpiMark® 5-hmC and 5-mC Analysis Kit can be used to analyze and quantitate 5-methylcytosine and 5-hydroxymethylcytosine within a specific locus. The kit distinguishes 5-mC from 5-hmC by the addition of glucose to the hydroxyl group of 5-hmC via an enzymatic reaction utilizing T4 β-glucosyltransferase (T4-BGT)
Complete conversion of 5-hmC to glucosylated 5-hmC in DNA.
Discrimination between 5-mC and 5-hmC in CCGG sequences using enzymatic.
Digestion and PCR amplification.
Relative quantitation of 5-mC and 5-hmC. Easy-to-use protocol.

15- **EpiMark® Bisulfite Conversion Kit**
used to determine the methylaton status of DNA

16- **Methyltransferases for Epigenetics**
Our selection includes CpG methyltransferase which is especially useful for studying CpG methylation effects. These enzymes are also useful for producing positive controls for methylation-specific PCR or bisulfite sequencing.

dam Methyltransferase
TaqI Methyltransferase
AluI Methyltransferase
BamHI Methyltransferase
CpG Methyltransferase (M.SssI)
EcoRI Methyltransferase
G9a Methyltransferase
GpC Methyltransferase (M.CviPI)
HaeIII Methyltransferase
HhaI Methyltransferase
HpaII Methyltransferase
Human DNA (cytosine-5) Methyltransferase (Dnmt1)
MspI Methyltransferase
PRMT1 Methyltransferase
SET7 Methyltransferase