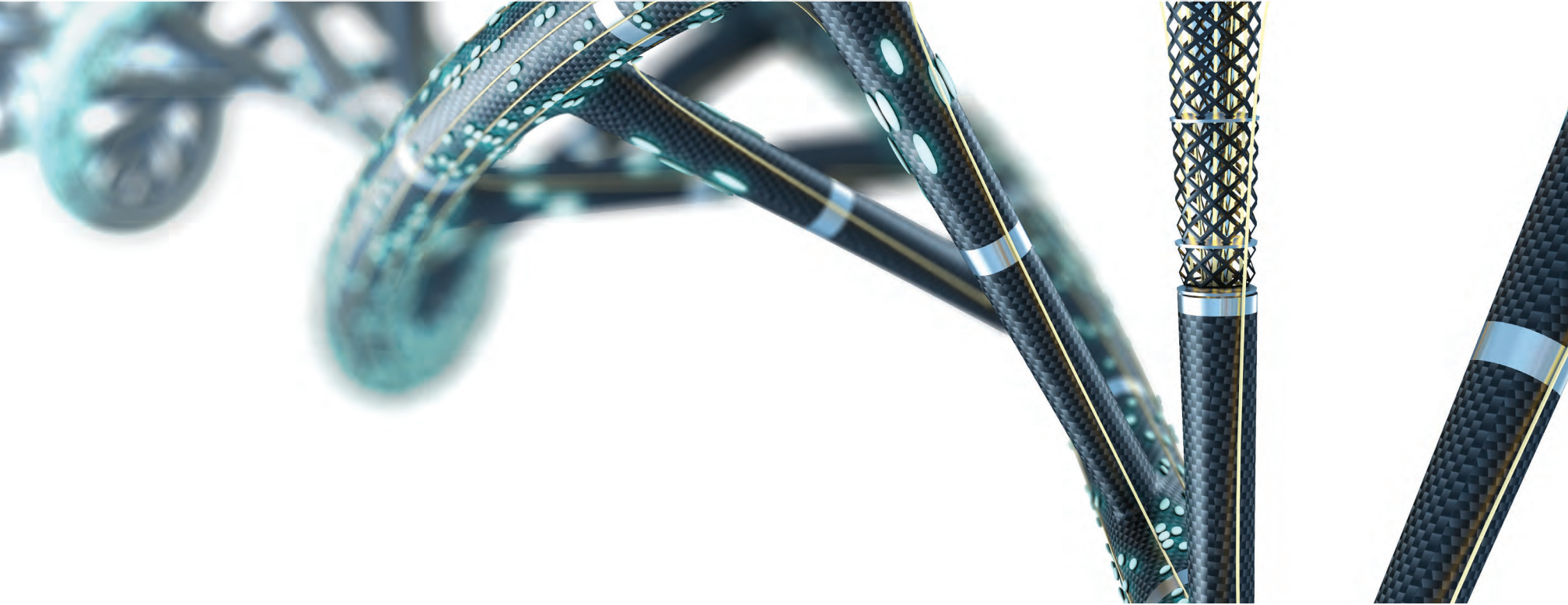
PROGRAMMING THE GENOME

Mirus®



At Mirus Bio, our role in PROGRAMMING THE GENOME is to provide scientists turnkey tools to ADD, DELETE or MODIFY any gene at will. We accomplish this through support of ANY DELIVERY METHOD capable of delivery of ANY NUCLEIC ACID into ANY CELL TYPE.

Whether there is a need for high functional virus titers, or efficient knockdown of target genes, or effective, low toxicity solutions, our delivery systems for molecular and cell biology applications give researchers unprecedented genome control at their fingertips.

Chemical Transfection

Chemical carriers such as our *Trans*IT® Transfection Reagents represent the most straightforward and widespread tools for gene delivery experiments in mammalian cells. Chemical transfection experiments follow a simple workflow and provide high efficiency nucleic acid delivery for the most commonly used cells as well as many hard-to-transfect cell lines.

Viral Transduction

Transduction is the deliberate introduction of nucleic acids to cells via viral vectors such as lentiviruses, adenoviruses and adeno-associated viruses (AAV). Viruses harness the power of millions of years of evolutionary refinement to efficiently deliver genes to cells. Our *Trans*IT®-Lenti Transfection Reagent provides high efficiency transfection of packaging vectors to achieve maximal virus titers in HEK-293T cells, and our *flash*BAC™ Baculovirus Expression Systems enable high yield protein production in insect cells.

Electroporation

Electroporation is a simple and rapid gene delivery method that utilizes a short, high-voltage electrical pulse to create transient openings in the cell membrane in order to allow loading of desired cargo into the cell. Electroporation achieves efficient delivery of nucleic acids in most cell types with minimal optimization. Ingenio® Electroporation Kits offer a simple, broad spectrum solution for gene delivery and are compatible with most conventional electroporation devices.

ANY CELL TYPE

Broad Spectrum Delivery

The best starting point for gene delivery is a broad spectrum transfection reagent which performs well across various cell types. Our highest performance broad spectrum solution, *Trans*IT-X2® Dynamic Delivery System, leverages our latest advances in polymer chemistry for delivery of plasmid DNA, siRNA/miRNA and CRISPR/Cas9 components.

Cell-Type Specific Reagents

Certain cell types and cell culture conditions require specific formulations for efficient transfection. We have developed specialized reagent formulations for breast cancer cell types, keratinocytes and laboratory workhorse cell lines such as: HeLa, CHO, HEK and more. Not sure which reagent to choose? Our Reagent Agent® Transfection Database takes the guesswork out of experimental planning by providing product and protocol recommendations for your nucleic acid and cell type.

ANY NUCLEIC ACID

DNA Delivery

Plasmid DNA delivery remains one of the most versatile and efficient gene delivery methods for various applications ranging from protein expression to gene silencing with shRNA. Our broad spectrum reagents, *Trans*IT-X2® Dynamic Delivery System, *Trans*IT®-2020 Transfection Reagent and *Trans*IT®-LT1 Transfecton Reagent enable delivery to a wide range of cells with maximal cell viability. Electroporation with our Ingenio® Electroporation Solution extends this list to virtually any cell type with superior delivery efficiency using a single economical and convenient solution.

siRNA, miRNA and Oligonucleotide Delivery

One of the most widespread techniques for interrupting gene function is RNA interference (RNAi). Mirus offers three distinct reagent formulations for efficient gene knockdown in a wide range of cell types: *Trans*IT-X2® Dynamic Delivery System, *Trans*IT-siQUEST® Transfection Reagent and *Trans*IT-TKO® Transfection Reagent. Additionally, our *Trans*IT®-Oligo Transfection Reagent has been used to deliver a wide range of oligonucleotides for controlling gene expression including phosphodiester DNA, phosphothioate DNA (sDNA), phosphothioate RNA (sRNA), 2'OMe RNA, 2'OMe RNA/sDNA Chimerics, and Morpholino/DNA duplexes.

CRISPR Guide RNA and Cas9 RNP Delivery

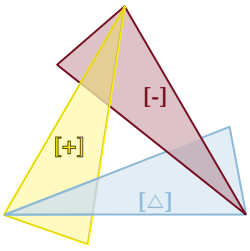
Our *Trans*IT-X2® Dynamic Delivery System and *Trans*IT®-mRNA Transfection Kit efficiently deliver single or two-part guide RNAs. *Trans*IT-X2® Dynamic Delivery System also efficiently delivers Cas9 protein and guide RNA as a ribonucleoprotein (RNP) complex.

mRNA Delivery

mRNA transfection enables rapid gene expression and eliminates the risk of insertional mutagenesis. Our *Trans*IT®-mRNA Transfection Kit efficiently delivers mRNA as well as longer viral RNAs.

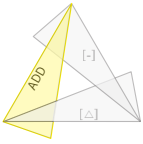
mirusbio.com

DELIVER INNOVATION. EMPOWER DISCOVERY. IMPROVE LIFE.



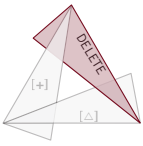
PROGRAMMING THE GENOME

Advances in genetic tools and nucleic acid delivery methods are ushering in a new era in science where researchers can readily apply engineering principles to biology. With the right gene delivery tools at their disposal, scientists now have unprecedented genome control at their fingertips.



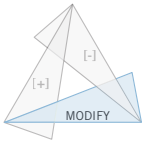
//GENE ADDITION//

Chemical transfection, electroporation as well as transduction with viruses such as AAV and baculovirus can achieve high levels of transient gene expression. Stable integration, CRISPR genome editing and lentivirus transduction can be used for genomic insertions leading to long-term expression.



//GENE DELETION//

Gene expression can be reduced with siRNA, miRNA and antisense oligonucleotides, or eliminated with CRISPR genome editing.



//GENE MODIFICATION//

Genome editing with CRISPR allows for precise and targeted genome modification such as tagging, replacing or truncating endogenous genes

Reagent Agent®
A TOOL FOR EXPERIMENTAL SUCCESS

Reagent Agent® is a transfection database tool you can use from a computer or as an app via iPhone/iPad

Reagent Agent® has solutions for over 750 cell types supported by:

- Extensive in-house transfection and electroporation data
- Customer feedback
- Product citations

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