


Custom Oligonucleotides:

Products & Services



The Modified Nucleic Acid **Experts**[®]

 **TriLink**
BIOTECHNOLOGIES
part of Maraval LifeSciences



For over 20 years, TriLink has been an industry leader synthesizing oligonucleotides for research, diagnostics, OEM, & therapeutics.

Our oligo scientists and production staff have over 150 years of collective experience with oligonucleotide chemistry and methods development. Masters at synthesizing difficult and unusual constructs, we have earned ourselves a global reputation of expertise and reliability. We offer a wide selection of DNA, RNA, modified, and specialty oligonucleotides in scales from 5 μ mol up to multiple millimoles. Additionally, our cGMP manufacturing facility makes us an ideal partner for your early phase clinical diagnostic and therapeutic needs.

Custom Oligonucleotide Synthesis

Partnering to Help Advance Innovation

We understand firsthand how important reliable, quality products are to your business. That's why we've put robust programs in place to provide the best customer service and technical support in the industry, including:

- » A dedicated technical support representative to personally oversee and communicate with you about your project
- » Access to our expansive team of modified nucleic acid experts with decades of experience
- » Personal consultation to determine the scale, QC, and level of documentation needed for your current and long term project goals
- » Evaluation of your synthesis scheme and recommendations for efficient transition to commercialization

Personalized Support

When you partner with TriLink as your trusted supplier, you'll maximize your budget and resources with our:

- » Expertise in oligo design and processing
- » Decades of experience synthesizing difficult constructs
- » Remarkably high success rates synthesizing complex oligos
- » Unparalleled product purity and performance

For complete information about our oligonucleotide products and services, please visit trilinkbiotech.com/custom-oligos.



DNA Oligonucleotides

Whether you're looking for basic DNA oligonucleotides or working with complicated sequences and modifications, we can synthesize your oligos at the scale and purity that you need. Our standard synthesis scales are 5.0, 10 and 15 μmol , and we'll custom synthesize oligos at any scale up to multiple millimoles.

We offer a variety of custom DNA oligonucleotides, including:

- » Molecular beacons
- » Randomer (wobble) oligos
- » TINA oligos
- » Light-activated oligos
- » Chimeric oligos

Modifications

Our expertise, combined with an extensive selection of modifications and conjugates, offers you virtually endless possibilities for your oligonucleotide synthesis. In fact, we offer over 300 modifications and almost 40 million possible synthesis combinations. Our extensive options for modifications are unparalleled in the industry and include:

- » Backbone modifications
- » Modified & inverted bases
- » Linkers & spacers
- » Fluorescent dye labels & quenchers
- » Biotin & other non-fluorescent conjugates
- » Terminal phosphates & 5' terminal caps
- » Dimer & trimers

trilinkbiotech.com/custom-oligos





RNA Oligonucleotides

Over the past 20 years, we've used our expertise manufacturing high quality nucleic acids to optimize the synthesis and purification of RNA oligonucleotides. We specialize in highly modified oligos and derivatives such as 2' O-Methyl RNA, 2' Fluoro RNA, phosphorothioate RNA, and conjugation to molecules such as PEG and cholesterol. We are one of the most trusted suppliers of specialty constructs including:

- » Long RNA synthesis
- » CRISPR guide strand (sgRNA) synthesis
- » siRNA
- » microRNA
- » Aptamers
- » RNAi
- » RNA sequencing primers
- » Chimeric oligos

RNA Oligos as Research Tools

Over the last two decades, there has been significant progress in the development of oligonucleotides as therapeutics. RNA and RNA/DNA chimeric oligos have been used as antisense inhibitors, aptamers, CpG immunostimulatory molecules, molecular decoys, and as RNA interference (RNAi) triggers.

Antisense therapeutics and oligonucleotide based RNAi, as well as microRNA mimics and inhibitors, are all showing great promise as powerful research tools and are evolving as a new class of potential therapeutics.

For more information about all of our RNA oligonucleotides, including details about our extensive options for modifications, please visit trilinkbiotech.com/custom-oligos.



Since 1996, we've been collaborating with our customers at the forefront of scientific discovery to enable everything from exploration to commercialization. To support researchers and scientists working on the cutting edge of nucleic acid development, we offer a number of specialty oligos and modifications.

Specialty Oligos & Modifications

Randomer (Wobble) Oligos

Randomer oligos have become an essential tool in diagnostic research. They can help identify a gene that codes for a protein of interest when the specific sequence is unknown, or they can amplify a genetic target to generate a pool of all available sequences. TriLink has done extensive research and development to ensure consistent base composition and minimal lot variability for ultimate performance in the most sensitive assays.

Molecular Beacons

Molecular beacons are a diagnostic tool that can report the presence of specific nucleic acids. These oligos offer a non-radioactive approach to detecting specific nucleic acid sequences, and are often used in real-time and multiplex PCR, SNP detection, allele discrimination and identification, and diagnostic assays.

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Mid-Scale Synthesis

TriLink specializes in mid-scale synthesis (50 mg to multiple grams) of both DNA and RNA oligonucleotides. Our mid-scale oligos are available with phosphodiester (PO), phosphorothioate (PS) or PO/PS combination backbones. We offer an extensive selection of modifications for oligonucleotides such as linkers, spacers, dyes and modified bases. We can do mid-scale synthesis for almost any modification you may need.

Our standard mid-scale oligos are typically purified by HPLC and analyzed by PAGE, HPLC and mass spectroscopy. Process development, cGMP manufacturing and unpurified, desalted oligos are also available.

Quality

Every oligo we synthesize is deprotected and desalted. Each oligo is also quantitated by UV spectrophotometry and undergoes quality control analysis by PAGE, mass spectrometry, and/or HPLC. Should your research or manufacturing have specific purity requirements, we offer a variety of additional purification methods including:

- » AX-HPLC, RP-HPLC or double RP-HPLC
- » RP-cartridge
- » Ion pairing HPLC
- » Size exclusion
- » SO9001.2015 certification
- » Comprehensive quality programs and systems for document control

Packaging & Processing Services

For your convenience, we offer a range of aliquoting and final-fill options, including specific concentration formulations, oligo mixes, and custom packaging and labeling. We also provide a number of special processing services including mixed bases and annealing.

Pricing and Ordering of RNA and DNA Oligonucleotides

Purity and yield for mid-scale RNA and DNA oligonucleotides are highly dependent on sequence, therefore set pricing is not available. Please contact us and we'll be happy to provide a quotation for your RNA or DNA oligo.

trilinkbiotech.com/contact-us



cGMP Manufacturing

We've combined our expertise in nucleic acids with a new state-of-the-art cGMP production facility to now offer cGMP manufacturing for early phase clinical trials. With nine dedicated manufacturing suites and two support labs, TriLink can deliver your material on schedule and on budget.

We offer a wide range of manufacturing scales enabling you to specify the exact amount of material for pre-clinical IND toxicology studies or early phase clinical trials. In addition to drug substances, we'll provide all the required supporting documentation to streamline the IND submission process and carry you through to clinical trials, making the process efficient and effective.

cGMP features include:

- » Compliance with ICH Q7, section 19
- » ISO Class 7 and Class 8 clean rooms
- » Single-pass, HEPA filtered air system
- » Routine monitoring of temperature, pressure, humidity, and particle count

For complete detail about our cGMP services, please visit us at trilinkbiotech.com/GMP.

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