

ANTISENSE OLIGOS

Synbio Technologies is a leading provider of oligo synthesis services, offering antisense oligonucleotides (ASOs) that are specifically designed to target complementary RNA and prevent its translation into proteins. Our antisense oligos have the ability to recognize specific mRNA sequences, thereby blocking the translation of corresponding proteins and ultimately leading to the inhibition of gene expression.



Our oligonucleotide synthesis process is optimized to produce high-quality antisense oligonucleotides that are engineered to provide maximum binding affinity and stability. We use state-of-the-art methods and cutting-edge technologies, such as HPLC purification and electrospray ionization mass spectrometry (ESI-MS), to ensure the highest level of purity and accuracy.

Our team of experts is dedicated to developing and optimizing oligonucleotide synthesis protocols to produce high-quality oligos with excellent yield and purity. We have the expertise to design and synthesize custom oligos for a variety of applications, including gene targeting, aptamer synthesis, and gene expression analysis.

ASOs SERVICE SPECIFICATIONS

Yield	Purification	Modifications	Deliverables	Turnaround Time
R & D level: µg-mg	HPLC	PTO, 2'-F, 2'-OME, 2'-MOE, LNA, Cholesterol, GalNAc, and more.	Dry powder delivery according to shipping needs COA files	1 Week
Manufacturing level: g	HPLC	PTO, 2'-F, 2'-OME, 2'-MOE, LNA, Cholesterol, GalNAc, and more.	Dry powder delivery, according to shipping needs COA files	Contact Us

* If you need other special modifications or pricing, please contact us for a quote at quote@synbio-tech.com.

APPLICATIONS

Antisense DNA oligonucleotides have multiple applications in the field of molecular biology, with a particular focus on studying and identifying RNAi phenotypes. Here are some of the most common applications of ASOs:

- **Gene Expression Knockdown:** ASOs can be designed to target specific messenger RNA (mRNA) transcripts and prevent their translation into proteins. This can be achieved by disrupting the binding of ribosomes to the mRNA, cleaving the mRNA, or recruiting RNase H to degrade the mRNA. ASOs can be used to study the function of a gene by observing the effects of its knockdown.
- **Alternative Splicing Regulation:** ASOs can influence the splicing of pre-mRNA transcripts and result in the alteration of gene expression. By binding to intronic or exonic sequences, ASOs can modify the splicing machinery's binding affinity and promote or hinder inclusion or exclusion of exons.
- **RNA Editing:** ASOs can be designed to recruit adenosine deaminases to facilitate RNA editing. The ASO sequences can bind to double-stranded RNA, exposing specific adenosine residues to deamination and resulting in the conversion of adenosine to inosine, which is translated as guanosine. This approach has been applied to study RNA editing in disease models.
- **Antisense Therapy:** ASOs can be designed to target specific disease-causing mRNAs, such as those coding for oncogenic proteins, in order to inhibit their translation and reduce pathological effects. This approach has been used for diseases like spinal muscular atrophy and hereditary angioedema, with some ASOs undergoing clinical trials.
- **Aptamer-Mediated Delivery:** ASO sequences can be used as a scaffold for attaching aptamers, which are nucleic acid sequences that bind to specific targets with high affinity and specificity. The resulting conjugates can be used for targeted delivery of drugs or other molecules to specific cells or tissues.

ASOs are powerful tools for investigating gene function, regulating gene expression, and developing new therapies for genetic and other diseases. Their versatility and specificity make them a valuable resource for molecular biologists and clinicians alike.

Synbio Technologies is a leading provider of high-quality oligonucleotide products to customers around the world. Our state-of-the-art synthesizers, coupled with our team's expertise in synthesis and modification technologies, enable us to offer a wide range of oligonucleotide synthesis options. These options include custom DNA oligos, diagnostic oligos & probes, NGS oligos, modified oligos, antisense oligos, and CpG ODNs.

We also provide high-throughput oligo library and oligo pool synthesis for large-scale projects. With over a decade of experience in the synthetic biology field, customers can trust Synbio Technologies as their go-to partner for all their synthetic biology needs.

Standard Deliverables

1. Lyophilized dry DNA oligo powder.
2. Certificate of analysis (COA) including sequencing information, OD, Tm, etc.

Ordering Details/Requirements

- Synthetic Sequences
- Synthetic Specifications
- Modification Type
- Synthetic Scale

UNBEATABLE ADVANTAGES

EXPERIENCE THE SYN BIO TECH DIFFERENCE.



ISO 9001 & ISO 13485:

Certified quality control ensures reliability.



Delivery Speed:

We guarantee fast delivery times without compromising quality.



Specialized Support: Our team of nucleic acid experts provides professional technical support.



Customization: We can provide various modification types and flexible synthesis specifications.



Quality Analysis: HPLC and LC-Mass analysis (endotoxin and bioburden detection can be provided for cell experiments).



Manufacturing Capability:

Microgram-to-gram-scale quantity can meet customers' requirements from R&D level to manufacturing level.