

# CUSTOM OLIGOS & PREDEFINED DNA/RNA

High quality DNA and RNA custom services



# A GERMAN LEADER IN THE SYNTHESIS OF SPECIAL NUCLEIC ACIDS FOR MORE THAN TWO DECADES

**IBA** has long-term expertise in labeling and production of specialized and labor-intensive nucleic acid products. Our team is able to fulfill the most unique requests of our customers due to continuous research and development of new modifications that cannot be found elsewhere.



You ask for it –  
we synthesize it!  
Just tell us  
what you need.

## Chimeric oligos

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all combinations of:

- › DNA
- › RNA
- › 2'-O-Methyl-RNA
- › 2'-Fluoro-RNA
- › 2'-Amino-RNA

## WE PROVIDE

### DNA

- › Standard DNA oligonucleotides
- › Long range up to 200 bases\*
- › Large scale oligonucleotides
- › 3'-, 5'- or internally modified
- › Alkyne dUTP/dCTP triphosphates on Stock

### RNA

- › dsRNA, siRNA, random RNA
- › Long range up to 100 bases\*
- › 3'-, 5'- or internally modified and with trinucleotides
- › 2'-modified: -O-Me, -F, -NH<sub>2</sub>
- › Nucleoside Triphosphates
- › RNA and RNA/DNA hybrid dinucleotides

### miRNA

- › hsa-/mmi-miR 21/143/122/221/155
- › Probe design
- › Optimization of temperature

\*depending on sequence and scale

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"We were always fully satisfied with the exceptional quality, purity and reliability of the amount of unlabeled and labeled oligonucleotides, as well as with the customer support provided by IBA."

*Prof. Dr. Markus Sauer, Biotechnology & Biophysics,  
University of Wuerzburg, Germany.*



### Fluorescent labels

- › Atto
- › Alexa Fluor®
- › Cyanine
- › Dy
- › FAM
- › TET
- › JOE
- › Eterneon™
- › Abberior®
- › Chromeo®
- › BHQ®/BBQ quenchers and many more!

Request a poster  
with our available  
fluorescent labels at  
**oligoexpert@**  
**iba-lifesciences.com**

## FLUORESCENT LABELS

- › For dual and multiple labeled DNA and RNA
- › More than 200 labels to choose from
- › Covering the entire spectrum from ultraviolet to infrared
- › Stokes shifts up to 180 nm  
Licensed supplier of oligos labeled with Alexa Fluor® (Molecular Probes, owned by life technologies)
- › Alternative dyes from Atto-Tec, Luminartis, Abberior, Dyomics and BaseClick
- › Quenchers such as BBQ and BHQ®
- › Excellent high quality and competitive prices
- › FRET-Standards on stock (hi/low/mid)
- › e.g. qPCR, FCS/FCCS, confocal and STED microscopy, single-molecule imaging, multi-color DNA and RNA FISH, DNA Origami

## MULTI-COLOR APPLICATIONS!

We synthesize oligos using the **Click-Chemistry**, allowing completely new dye combinations not previously available and at so far unreachable labeling densities.

# NON-FLUORESCENT MODIFICATIONS

- › More than 80 internal, 5'- and 3'- DNA and RNA modifications to choose from
- › Incl. Biotin, Iminobiotin, Desthiobiotin and Digoxigenin
- › For DNA microarrays
- › Surface binding and hybridization experiments
- › Cross-linking and crystallography studies

## BACKBONE MODIFICATIONS

### PHOSPHOROTHIOATES

For antisense applications, we offer the nuclease-resistant Phosphorothioates (PTOs) for DNA and RNA. Introduced at either the 5'- or 3'-end of an oligo, Phosphorothioates can inhibit exonuclease degradation. If they are introduced internally, they can limit attacks by endonucleases.

## PHOTO-REGULATION OF MODIFICATIONS

We use UV or visible light to control reaction with azobenzene modification. This process is fully reversible and does not decompose or induce undesirable side reactions.



Request a brochure  
with our available non-  
fluorescent modifications  
at **oligoexpert@**  
**iba-lifesciences.com**

### Non-fluorescent modifications

- |                 |           |
|-----------------|-----------|
| › Bromo         | › Glycol  |
| › Amino         | › HEGL    |
| › Deaza         | › Thiol   |
| › Carboxyl      | › DBCO    |
| › Phosphate     | › Spacers |
| › Psoralen      | › Ethynyl |
| › Biotin        | › Hexynyl |
| › Desthiobiotin | › Alkyne  |
| › Digoxigenin   | › EDTA    |
| › Methyl        |           |

# APTAMERS – AN ALTERNATIVE TO ANTIBODIES

With our expertise in high quality oligonucleotide synthesis we offer custom synthesis of DNA as well as RNA aptamers, depending on your needs.

Due to their specificity, high affinity, low immunogenicity and ease of use, aptamers have been widely used in the medical and industrial fields of disease therapy, cell therapy, drug delivery, drug discovery, diagnostics, biosensors and bioimaging.

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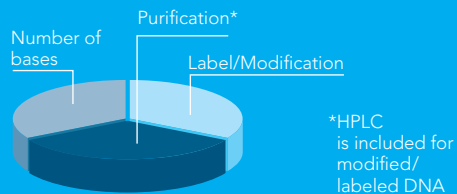
“When we started to work with aptamers, a collaborator recommended IBA for RNA synthesis and modification. Ever since we have been completely satisfied with IBA’s RNA and aptamer quality and appreciate the company’s excellent customer service.”

*C.F.M. Sier, Oncologic Surgery, Leiden University Medical Center,  
The Netherlands*





## Price composition



## 4 STEPS TO ORDER YOUR OLIGO

- 1 Choose your scale
- 2 List sequence 5' to 3'
- 3 Indicate modification type and position
- 4 Select purification method

### Scales available and typical yields

Typical yields of an unmodified 20mer\* (DNA and RNA)

Synthesis scale	Molecular Biology Grade	After HPLC
0.01 $\mu\text{mol}$	5–8 nmol	2–4 nmol
0.05 $\mu\text{mol}$	12–18 nmol	12–16 nmol
0.20 $\mu\text{mol}$	50–75 nmol	25–60 nmol
1.00 $\mu\text{mol}$	140–200 nmol	100–200 nmol
10.00 $\mu\text{mol}$	1,000–1,500 nmol	600–1,000 nmol
15.00 $\mu\text{mol}$	2,000–3,500 nmol	1,500–3,000 nmol

\*with equal base composition

**Oligo Shop** [www.iba-oligo.com](http://www.iba-oligo.com)  
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