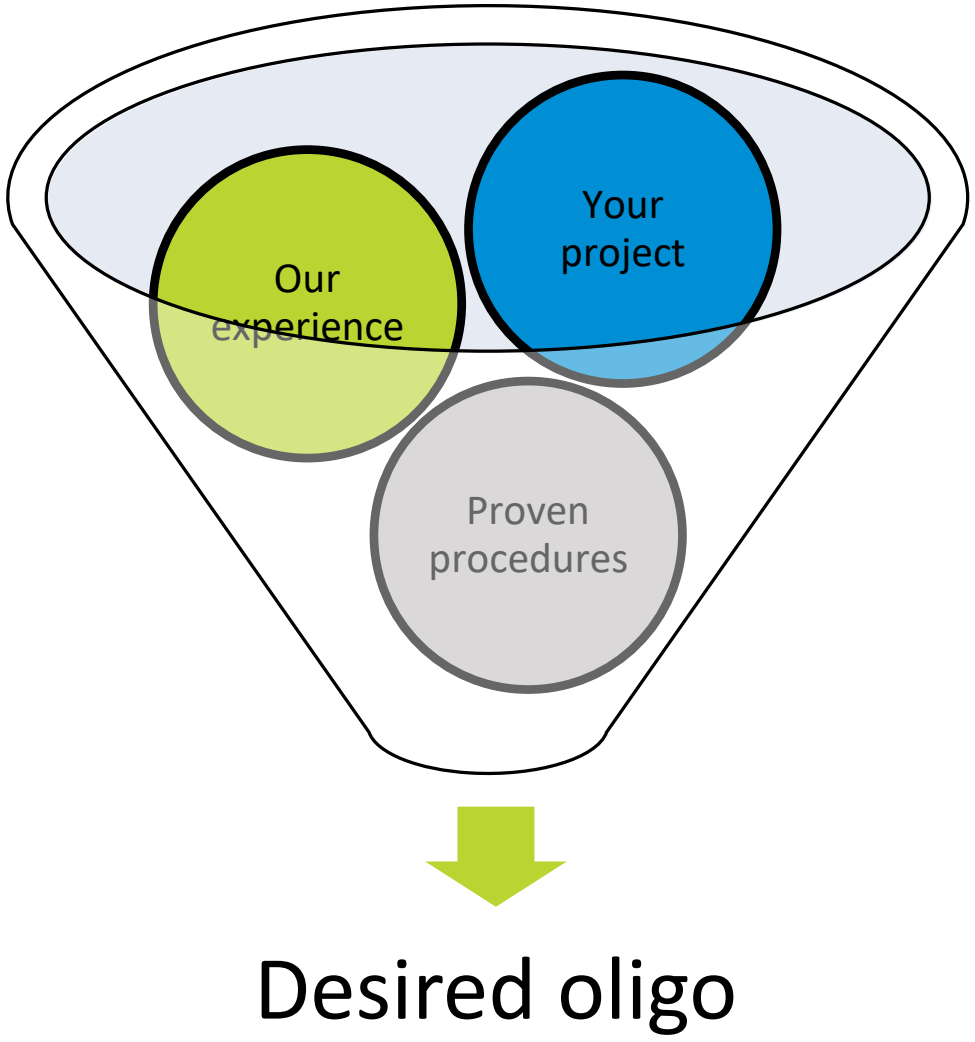

FUTURE
synthesis

ABOUT THE COMPANY

FutureSynthesis Ltd. is a biotechnology company specializing in the chemical synthesis of bio-molecules on behalf of clients. Our offer focuses primarily on the synthesis of nucleic acids, both RNA and DNA series.

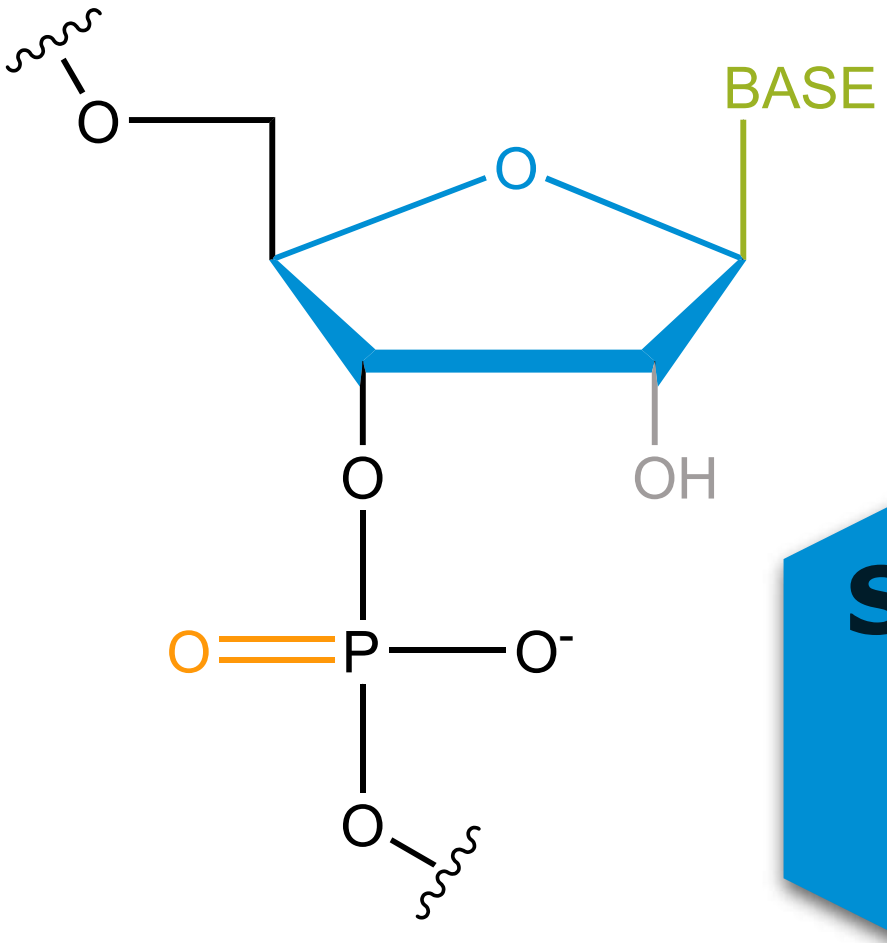
We offer the synthesis of nucleic acid molecules, with numerous modifications and the possibility of fluorescent labeling, as well as the synthesis of nucleic acids with mixed sequences containing ribonucleotides and deoxyribonucleotides at the same time, degenerate sequences and many other synthetic possibilities.

The purification methods we use, allow us to obtain high purity products. Our vast expirience with wide spectrum of analytical methods, guarantee you the highest quality of services.



OLIGONUCLEOTIDES MODIFICATIONS

We can make synthetic oligonucleotides with variety of modifications. We are offering 5' and 3' end labeling, as well as many internal modifications, some of them you can see below:



BASE
5-Me dC
8-Oxo-dG
Inosine

P
PTO

SUGAR
LNA

2'
OMe
MOE
F

APPLICATIONS OF RNA AND DNA OLIGONUCLEOTIDES

Oligonucleotides are now widely used in many scientific fields, including: biotechnology, molecular biology, genetic engineering, proteomics, immunology and pharmaceuticals. FutureSynthesis Ltd. provides high-quality products for applications in:

RNA structure and function studies, siRNA,	antisense strategies	PCR reactions	FRET, Real-time PCR and other applications of fluorescently labeled oligonucleotides
gene expression, gene therapy	molecular diagnostics	analyses of DNA repair mechanisms	epigenetic studies
immobilization on solid surfaces (e.g., microarrays)	restriction enzyme analyses, including RFLP	interaction studies, e.g., protein-DNA	inhibition of protein function
replication by rolling circle mechanism	studies of modern therapeutic strategies	*in vitro* translation	studies of Toll-like receptors (TLRs)

SYNTHESIS SCALES

We can provide individual approach to your experimental needs. Our standard scales are ranging from **100nmol** up to **300µmol**. We can also adapt scale to you.

Synthesis Scale [µmol]	Estimated quantity of oligonucleotide [mg]
0.1	0.5
0.2	1.2
1	3.0
10	9.5
75	65.0
150	180.0
300	400.0
750	1000.0

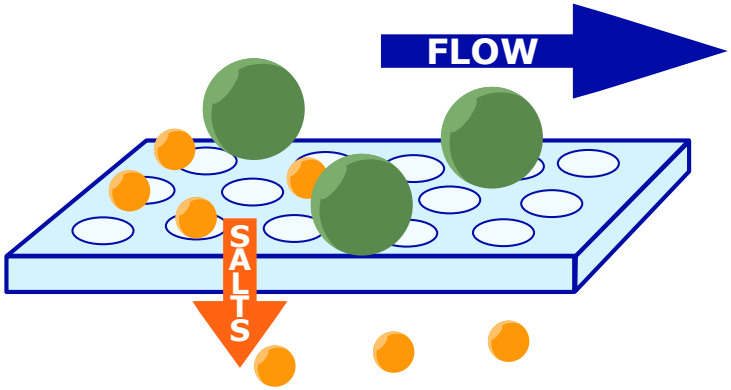
** This are quantities estimated for 20 mer DNA, desalted oligonucleotide*

PURIFICATION METHODS

SEC (Desalting)

Desalting on Size Exluding medium removes most non-oligonucleic contaminants.

For oligonucleotides to use as PCR and RT-PCR starters, sequencing primers.

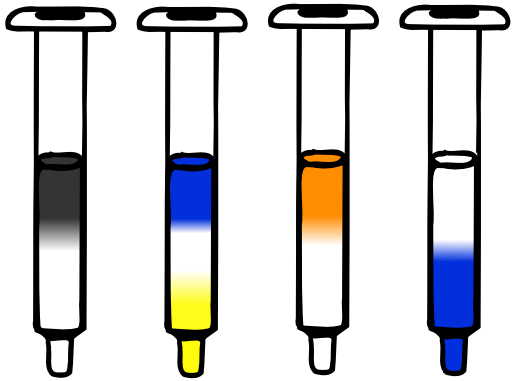


Ultra Filtration

Similary to SEC, ultrafiltration removes most non-oligonucleic contaminants, but can also be used to effectively transfer oligonucleotides to buffer of your choice.

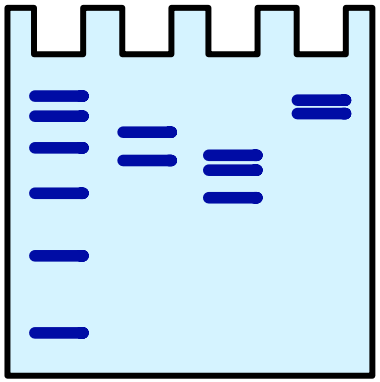
SPE Cartidge

SPE Cartriges are providing good ballance between cost and purity of oligonucleotides. For scales from 0.1 to 10 µmol we can provide you with good quality product (≈85% purity) using 5'-DMT labeling. Application for this type of oligonucleotides are similar to desalted oligonucleotides, but we can guarantee you purity of min. 80%.



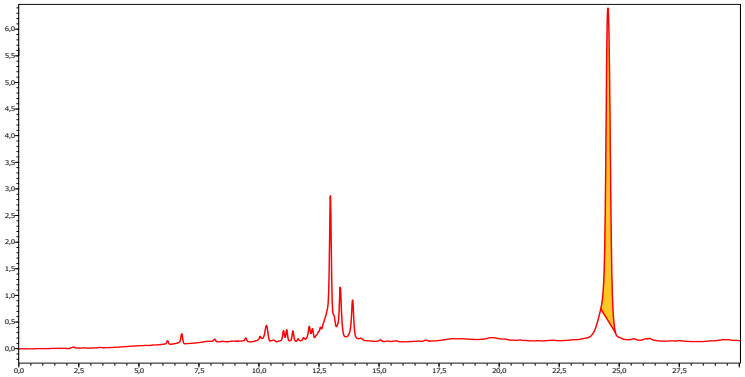
PAGE Purification

Polyacrylamide Gel Electrophoresis is ultimate purification method when small quantities of very high purity material is needed. It can yield higher purity oligonucleotides than HPLC, but is not as easly scallable, and salts used during process can interfere with some experiments.



HPLC Purification

HPLC methods are easly scallable and provide us with more control over purification step. In this way we can purify highly modified or labeled oligonucleotides, to be used as qPCR probes, bioengineering, cristalography or NMR studies. If highest purity is needed we can employ double HPLC purification, which uses IEX and RP modes of separation, when very high purity is needed.



OUR SPECIAL PRODUCTS AND SERVICES

Cys-stamine
Phosphonate Modification

Cystamine (2,2’-ditiobisethanamine) is an organic disulfide. It can bind to nucleoproteins and cause them to precipitate.

With this modification, it is possible to cross-link nucleic acids with the corresponding proteins by means of a dithiol linker (so-called “cross-linking”). Chemical cross-linking of complexes of proteins with nucleic acids is often used in structural and mechanical studies of these often unstable and transient complexes.

PRECISION RNA MASS MARKER
Precise single-stranded RNA length marker

Precision mass standard for short RNAs

UV detection capability

13 component RNA strands in the range of 10-100 nt

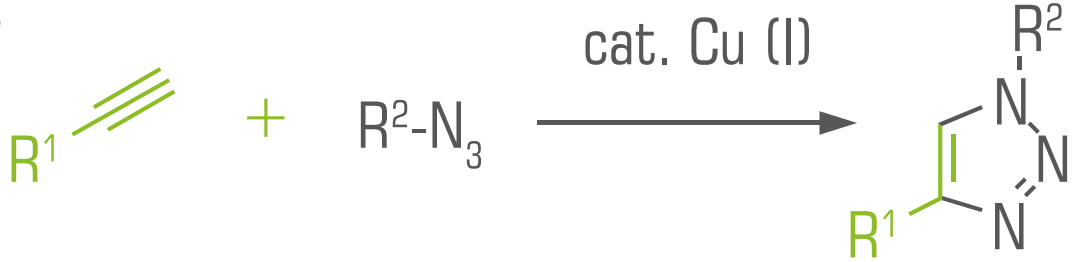
One set is sufficient up to 50 applications
or in the **eco** version up to 25 applications

Convenient use and ease of application

The kit comes with with a dedicated buffer

Click chemistry opens new possibilities in post-synthetic modifications of oligonucleotides, as well as in nucleoside modifications before synthesis. This highly efficient and fast procedure uses reaction between azide and alkyne.

- The reaction occurs in aqueous solution and at room temperature.
- Robust catalytic process
- No interference of functional groups
- Thermally and hydrolytically stable triazole linkage
- Unprecedented level of selectivity.



FUTURE synthesis

On our website you can find more information about the products and services we offer, as well as order oligonucleotides online with available modifications on the scales from 0.1 to 10 micromoles on our online order form.

We also offer large-scale syntheses above the indicated quantities, as described on one of the previous pages. For all other inquires that are unavailable in our online order form, please contact our team, and we will be happy to prepare a customized price quotation for you.

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We make your oligos beyond standard