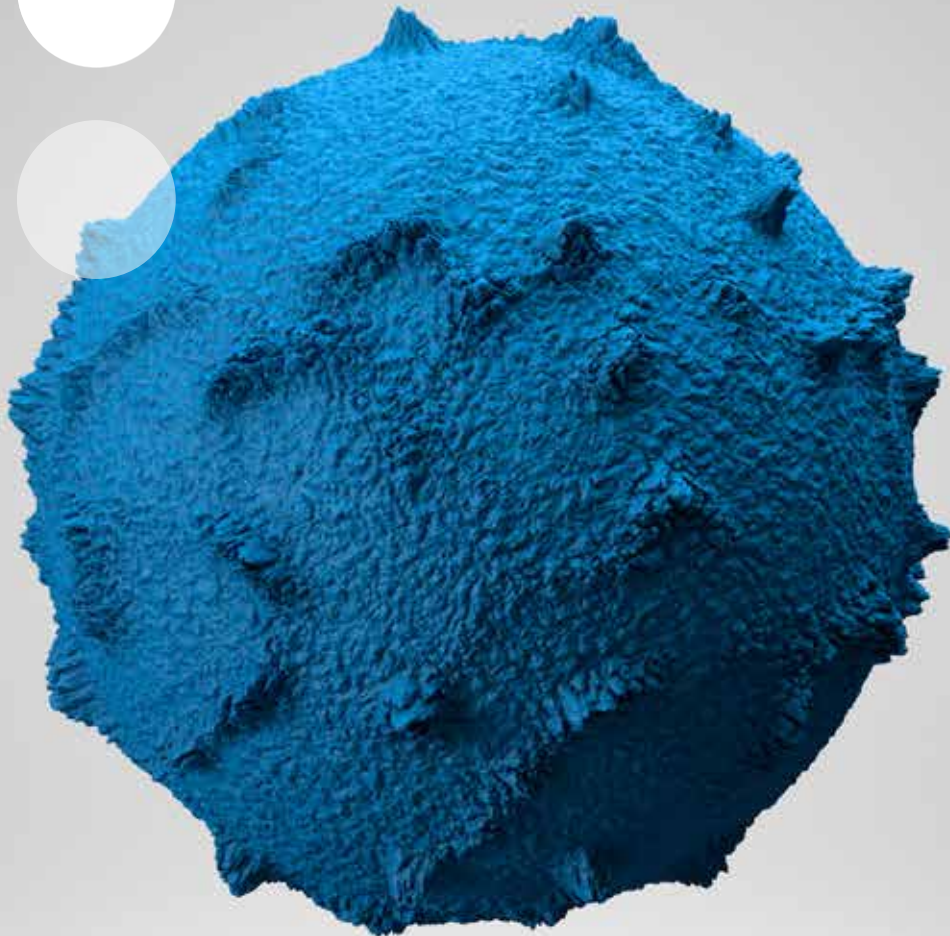


# Custom Pharma Services

Taking your RNA biomarker and therapeutics programs to the next level



# Custom Pharma Services

Exiqon's Custom Pharma Services include a broad range of RNA services, tailored to the needs of our pharmaceutical clients. Benefit from our world-leading **RNA profiling** and **biomarker discovery and validation services**, as well as our expertise in the latest generation of LNA™ antisense oligonucleotides for **Target Validation** and **Therapeutics**.

## At a glance

- Comprehensive RNA profiling Services – microRNA, mRNA and lncRNA
- RNA Biomarker discovery and validation Services
- Target Validation and Therapeutics – gene and microRNA silencing
- The best available RNA technologies tailored for your requirements
- Expert consultations – from optimal study design to biological meaning of results
- Automated workflows for cost-effective, rapid and highly reproducible results
- QA program ensures rigorous QC, LIMS, SOPs and IT Security

## Overview of Exiqon's Custom Pharma Services

	Services	mRNA	whole transcriptome	microRNA
RNA Profiling	NGS and qPCR services including clinical trial samples.	✓	✓	✓
RNA Biomarker Discovery and Validation	NGS and qPCR services from genome-wide screening to individual biomarker validation.	✓	✓	✓
Liquid Biopsies	NGS and qPCR services optimized for biofluids.	*	*	✓
Custom Sample Preparation	Custom protocol development for exosome and/or RNA isolation and sample QC for any sample type.	✓	✓	✓
Custom qPCR and ISH Assay Development	Bioinformatics custom design for quantification, <i>in situ</i> localization or biodistribution assessment of shRNAs, siRNAs, ASOs etc.	✓	✓	✓
Target Validation	Bioinformatics custom design of LNA™ ASOs for gene silencing <i>in vitro</i> and <i>in vivo</i> .	✓	✓	✓
RNA Therapeutics	Bioinformatics custom design of LNA™ ASOs for gene silencing optimized for therapeutic applications.	✓	✓	✓

\*Please enquire.

Whole transcriptome includes mRNA, long non-coding RNA (lncRNA), and other RNA species >170 nt.  
Abbreviations: ISH (in situ hybridization), ASOs (Antisense Oligonucleotides).

## Contact us

To discuss how Exiqon can assist you

[exiqon.com/contact](http://exiqon.com/contact)

# RNA Profiling Services

## Trusted RNA experts

Our expert scientists have been handling RNA samples for over 10 years, so we will ensure you get the best out of your samples.

Our comprehensive RNA profiling services enable you to analyze the full range of coding and non-coding RNAs in one place.

## Automation and accuracy

We utilize the market leading Illumina Next Generation Sequencing platforms and Exiqon's LNA™-enhanced qPCR platforms in state-of-the-art laboratories.

We are committed to providing results of the highest quality. Automated workflows, high-throughput robotic pipetting stations and rigorous QC ensure high reproducibility and accuracy.

## Clinical trial samples

We handle a wide range of clinical samples:

- serum/plasma and other biofluids
- blood
- exosomes
- fresh frozen and FFPE tissue
- LCM samples

As well as profiling, we also offer analysis of specific RNAs of interest.

We can advise you on the best strategy to include microRNA and RNA analysis in your clinical trials – with Exiqon, or your preferred CRO.

**“ We found Exiqon to be an experienced and capable partner.”**

Dr. Wendy Alderton, Abcodia Ltd.

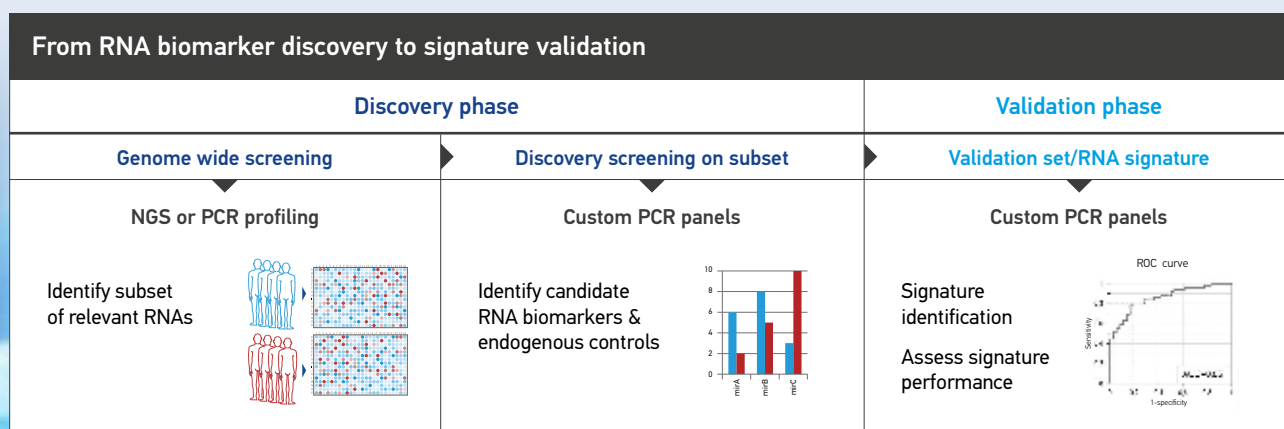
# RNA Biomarkers

## Novel biomarkers

Exiqon Custom Pharma Services assist pharmaceutical companies in their effort to develop new medicines based on non-coding and coding RNA as biological markers.

## Discovery and Validation

We are practised in transitioning biomarker discovery and validation across different platforms including NGS and qPCR.



**“ A complete sample-to-answer service, including everything from RNA isolation to extensive customized data analysis.”**

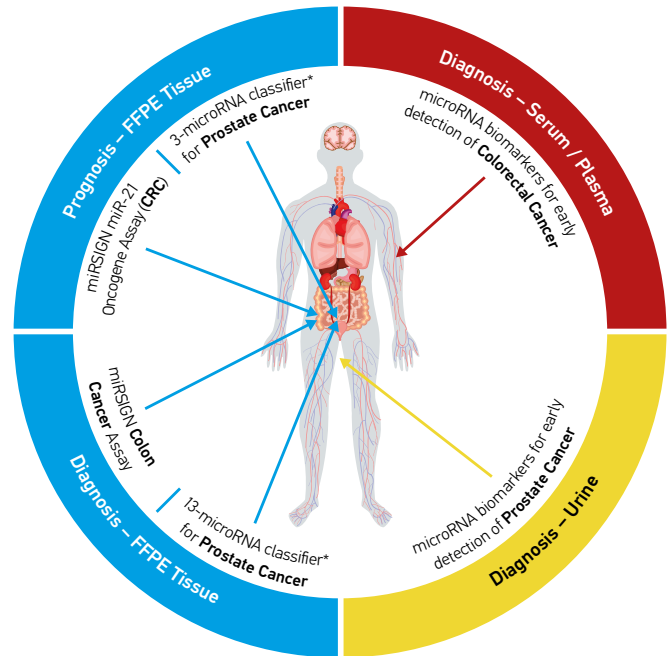
# Benefit from unrivalled RNA biomarker expertise

## In-house biomarker programs

Exiqon has specialist experience in RNA biomarkers and liquid biopsies, gained through our in-house biomarker discovery programs and pioneering work analyzing microRNA in biofluids.

## Scientific partnership

Exiqon are working together with the HESI Biomarkers of Nephrotoxicity Committee – a consortium including ten major pharmaceutical companies and the FDA – on urine microRNAs as toxicology biomarkers.



### Examples of Exiqon's in-house biomarker discovery programs

miRISIGN Assays are available as RUO tests.

\*Prostate cancer biomarkers have been published: Kristensen *et al.*, Oncotarget, 2016.

## Get more information from your liquid biopsies

### microRNAs as non-invasive clinical biomarkers

MicroRNAs are promising non-invasive biomarkers for diagnosis, prognosis, prediction of therapeutic response, and safety.

Exiqon are the ideal partner for the analysis of circulating microRNA biomarkers.

- >15,000 biofluid samples processed
- Extensive knowledge of pre-analytical variables
- Specialized QC procedures and protocols for NGS and qPCR
- Unique hemolysis indicator
- Reference ranges for circulating microRNAs
- Thoroughly validated on thousands of clinical biofluid samples



*Together we can help you develop a new generation of RNA biomarkers."*



# Target Validation and Therapeutics

## Potent gene silencing – *in vitro* and *in vivo*

Exiqon's third generation LNA™ antisense oligonucleotides enable silencing of messenger RNA, long non-coding RNA and microRNA – both *in vitro* and *in vivo*.

## Therapeutic applications

With demonstrated excellent PK/PD properties and long-lasting activity in a range of tissues *in vivo*, antisense technology is becoming the third major modality in the drug development industry. We provide expert guidance on LNA™ antisense oligonucleotide design for therapeutic use.

## Design tailored to your needs

Our Custom Pharma Services offer unique access to the bioinformaticians behind third generation LNA™ antisense oligonucleotides, enabling the design process to be customized according to your specific requirements.

## *In vivo* synthesis scales

We supply LNA™ antisense oligonucleotides in a range of purities and quantities – right up to high quality syntheses at mg – kg amounts for animal studies and clinical research.

### Proven LNA™ antisense technology – so good it works *in vivo*

mRNA and lncRNA	Antisense LNA™ GapmeRs
microRNA	miRCURY LNA™ microRNA Inhibitors miRCURY LNA™ microRNA Target Site Blockers



**Tumor growth was significantly inhibited in mice injected with the SAMMSON-targeting Antisense LNA™ GapmeRs.”**

Prof. Jean-Christophe Marine, K.U. Leuven



**We are extremely satisfied with the performance of Exiqon's Antisense LNA™ GapmeRs for knockdown of lncRNAs.**

**We are very excited about the prospect of utilizing Exiqon's platform for target validation.”**

Prof. Vandesompele, CSO Biogazelle

Our ambition. Your advancement.

Our ambition is to provide the world's best RNA technologies and services. So we can help you advance science.

For more information go to: [exiqon.com/pharma-service](http://exiqon.com/pharma-service)

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