



# NUCLEIC ACID-BASED MOLECULAR ASSAY DEVELOPMENT SERVICES

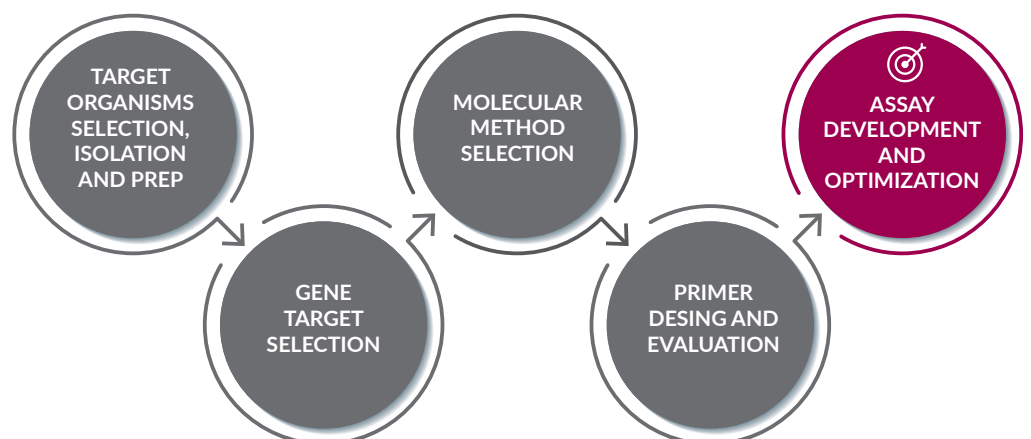
iFyber has a strong team of experienced molecular biologists that can assist in the design, development, and optimization of your nucleic acid-based molecular detection assays. Our scientists can help you identify the right combinations of materials, equipment, and processes to reach your development goals within your timelines. Our team has ample experience with primer design, assay development, and computational analysis of quantitative and non-quantitative polymerase chain reaction (PCR) and isothermal amplification methods such as loop-mediated isothermal amplification (LAMP).

## WHAT ARE NUCLEIC ACID-BASED MOLECULAR DETECTION ASSAYS?

Nucleic acid-based molecular detection assays can identify the presence or absence of a gene (or its transcript), monitor gene expression, or test for analytes of interest (e.g., microbial or other targets) in certain environments. The assay always targets a specific gene, and thus, makes the test highly specific. Results can be displayed in real-time or at a defined endpoint. Isothermal amplification techniques such as LAMP allow for the development of cost-effective, selective, and sensitive assays with point of care or field use potential due to the low technology requirement of LAMP. PCR assays can be used for fast and inexpensive high throughput screening in a quantitative manner.

iFyber has the experience and the expertise to develop and optimize nucleic acid based molecular assays for monitoring gene expression and the detection of nucleic acid targets. We provide guidance during preliminary assay viability assessments and help to determine the most successful route to achieve your project goals using a time efficient workflow (Figure 2).

Figure 1: Assay development workflow





## HOW CAN IFYBER HELP?

iFyber can provide its expertise to find the right chemistry, materials, and equipment to fit any molecular detection assay application:

- Select the best target organism and/or genetic targets
  - Bioinformatics
- Develop and optimize sample preparation
- Assay components
  - Buffer formulation parameters, such as pH, blocking agents, and surfactants
  - PCR/LAMP Master Mix
  - Primer design and testing
- Equipment selection and optimization.
- Assay validation

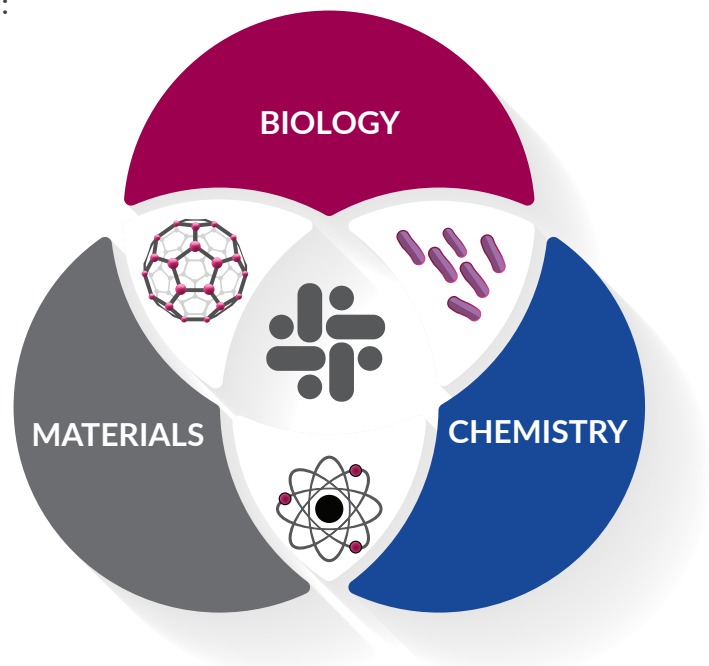
## EXAMPLE APPLICATION AREAS / MARKETS

- *In vitro* diagnostics
- Water testing
- Bioinformatics
- Wound care
- Food safety testing
- Environmental testing

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iFyber is a preclinical research organization offering customized services to companies that operate at the interface of chemistry, microbiology, and materials science. iFyber is unique. We pride ourselves on providing access to top scientists and creatively solving problems with quick turnaround times.

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## THINK OF IFYBER AS:

- Consultants with a laboratory to back up ideas with data
- An academic lab, solving R&D problems on corporate or start-up timelines
- A testing lab that develops new methods tailored to clients' products and services
- An extension of your quality, regulatory, and R&D teams