



مختبرات البرج
Al Borg Diagnostics

RESEARCH AND DEVELOPMENT DEPARTMENT



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Research & Development (R&D)



Vision

Our vision is to become the leading research lab in the region in making scientific breakthroughs, innovations, developments and disseminating scientific knowledge.



Mission

Our mission is to facilitate, contribute and share discoveries in the fields of life sciences, research, and development to drive medical innovation, screening, and monitoring diagnostic tests.



Goals

- Quality improvement of in-house assay.
- Maximizing productivity of research projects.
- Develop new protocols, applications, and products.
- Develop competences and networking of technologies.
- Enhance the collaboration and interaction between researchers and medical scientists.



Who Are We?

A team of clinicians and scientists experienced in laboratory diagnostics as well as in the research field. Our staff is internationally trained and well acclaimed with modern biotechnologies and informatics skills that are vital in transforming your ideas, projects, and proposals into scientific discoveries and products that will change the world for the better.

Who Do We Serve?

We offer a wide range of services for different research and academic centers, along with clinical and government laboratories in Saudi Arabia. We also serve independent researchers together with Ph.D. and Master's students. Moreover, we serve pharmaceutical organizations, medical and biotech product developers, and clinical research organizations.

Who Do We Work With?

We have a strong partnership with a network of national and international laboratories which has always been our key strength. We are a proud member of Global Diagnostic Network (GDN) as well as Quest Diagnostics, USA. Our R&D facility is located in Jeddah, Saudi Arabia, and we execute some specialized lab activities with our partner labs in King Abdulaziz University, King Saud University, and King Abdullah University for Science and Technology (KAUST).

Why Choose Us?

By choosing to outsource lab work to Al Borg Diagnostics, researchers may not only benefit from robust lab assays offered but can also boost their work outputs by saving valuable time, funds, and resources. Our state-of-the-art lab platforms, world-class scientific support, and data-driven interpretation approach enable clients to achieve desired research goals. We offer a wide range of lab services to researchers, which provides them easy access to modern technologies that offer true value, excellent performance, and reliable results in their experiments while maintaining competitive prices.

Services

Al Borg Diagnostics is a one-stop facility that meets all research needs, whether it is technical support, development and execution, custom experimental pipelines, data analysis, or publishing research results. We can measure everything because we are well-positioned in **in-vitro** and **in-vivo** diagnostic techniques and methods and have direct access to all lab experts, which provides endless possibilities in the field of life sciences.



Service Categories



Collaborative
Research Team



Wide Scope of
Laboratory Service



Commercial kit
Validation



Data Analysis



Continuous Education
Program



Collaborative Research Project

The R&D department looks forward to cooperating with researchers with a wide range of expertise in the life sciences to assist them in research design, customized experimental settings, sample size determination, laboratory testing, data analysis, and publication support.

Our team can benefit your research in multiple ways:



Maximize outputs



Maximize Impact



Attract funding



Expand your network



Embrace the new

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Department Services



Wide Scope of Laboratory Services

- Al Borg Diagnostics has dedicated state-of-the-art lab systems which grants the ability to handle large scale sample workflows in analytical chemistry, hematology, immunology, serology, flow cytometry, and microbiology related lab testing for your research samples.
- R&D is mainly specialized in high throughput assays ranging from nucleic acid sequencing to protein identification, from diverse molecular testing to data undermining, driving innovations in biology and medicine.



Nucleic Acid Purification

High-quality nucleic acid purification is the first essential step to acquiring successful results from your molecular biology experiments.

DNA isolation services are:



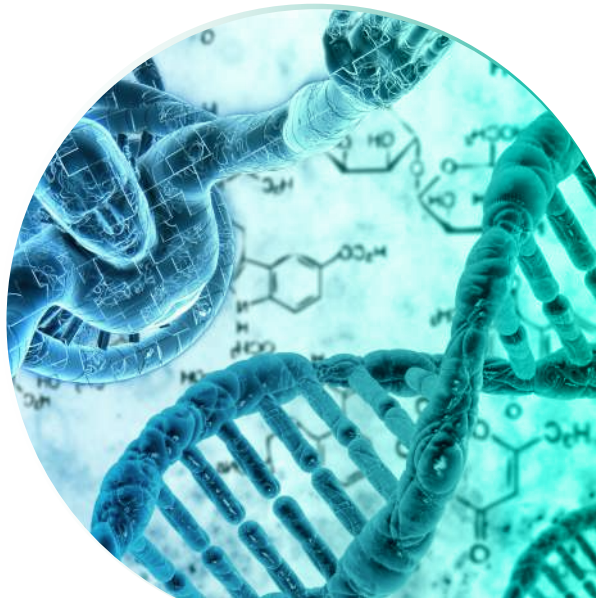
Genomic DNA and RNA (total RNA, mRNA, and miRNA)



Robust purification techniques to detect any source (human, plant, microbes, and cultured cells) from any sample (fresh, frozen, archival)



Sample quality check report using electrophoresis and spectrophotometer



Polymerase Chain Reactions (PCR/qPCR)

PCR assays target a specific region in the genome and are a highly sensitive, specific, time-efficient, and low-cost molecular method. Our scientific team is well-versed in performing customized PCRs based on the customer's interest. Our sophisticated PCR lab equipped with advanced PCRs (Biorad, Applied Biosystems) and specialized skills in developing PCR protocols helps researchers focus on data analysis and the next research move.

PCR services include:

- Consultation to understand your PCR services.
- Gene or fragment amplification (PCR).
- Gene expression quantitation (TaqMan or SYBR Green).
- Qualitative screening of genes (TaqMan probes).
- Real-time PCR based SNP genotyping (TaqMan probes)
- PCR-RFLP.
- Multiplex PCR.
- Data analysis, data interpretation and data provision (raw data files).



DNA Sanger Sequencing

We offer access to fast, high-quality, sample-to-data "gold standard of the sequencing" service with diverse applications in your human, plant, animal, and microbial research workflows.

With our modern sequencing instruments and advanced bioinformatics pipelines, you can expect innovative, affordable, and reliable solutions for any genomic challenge faced in research needs. We offer additional consulting services for optimizing your sequencing workflow to eliminate bottlenecks, improve productivity, and advance your research progress.

Sanger sequencing features are:



Single or multi-samples
(single tube or 96-
sample plates)



High quality (up to 1
KB read length with
full data QC review)



Easy online ordering
and shipment
procedures



Convenient and secure
data downloading
options (.ab1 formats)



Individual
bioinformatic solutions
on request



Customized support
at any stage for each
project

Next generation sequencing (NGS)

NGS technology produces very large volumes of sequence data allowing us to study the whole genome, whole exome, or target gene panels at unprecedented scale and speed. R&D offers a broad range of NGS services using the latest library preparation methods and sophisticated NGS instruments like Illumina's NextSeq 500 and MiSeq platforms.

Also, we offer full bioinformatics support and assistance in research design to provide maximum benefit and cost-effectiveness to our customers from academics, food/animal biotechnologists, and clinical researchers.

NGS application services includes:



Whole Genome Sequencing (WGS)



Whole Exome Sequencing (WES)



Denovo Sequencing



Metagenome Sequencing and Analysis



Epigenetics Sequencing



RNA Sequencing and Analysis



Targeted re-Sequencing of Gene Panels



Microbiome Analysis



Virome Sequencing

Enzyme-linked Immunosorbent Assay (ELISA) Services

The enzyme-linked immunosorbent assay (ELISA) is an immunological assay commonly used to measure antibodies, antigens, proteins, and glycoproteins in biological samples. Some examples include: diagnosis of HIV infection, pregnancy tests, and measurement of cytokines or soluble receptors in cell supernatant or serum.

Send us your samples,
and we will run the
assay for you

Sample
testing
services

Custom
immunoassay
development and
services

- Developing a custom assay unique to your target with a detailed project report.
- Custom plate coating for every project to enable consistency across experiments.
- Requesting additional QC testing of assays

Requesting multiple
assays from a single kit
for significant or
long-term studies

Bulk
work

Protein Gel Analysis

Sodium dodecyl sulfate-polyacrylamide gel electrophoresis (SDS-PAGE) is the most common gel electrophoresis used for analyzing the proteins in different samples like: body fluids, tissues, blood cells, cell cultures, micro-organisms, plants, etc.

SDS-PAGE has a broad range of applications, including: molecular weight measurement, characterization of impurities, and protein expression experiments.

We can perform both qualitative and quantitative measurements of target proteins in your biological samples.





Commercial Kit Validation

Al Borg Diagnostics is the best choice company to develop and validate a broad range of **in-vitro** diagnostic (IVD) assays for new start-ups or multinational companies in the Middle East with different accreditation systems. Our fully dedicated lab systems, and highly skilled staff, who have 15+ years of experience in developing or validating 100s of IVD assay developments, offers an excellent service in accelerating your IVD assay development, validation, and product launch in the market.

Our team knows the potential of your ideas and innovations, and thus offers full dedication in making your idea a successful product or service in the market. Currently, our IVD assay development, validation, and product launch services are open for medical genetics, infectious diseases, biochemistry, immunology, and pathology tests.



Data Analysis

The R&D unit provides interpretation and data analysis services for data generated from laboratory testing performed through our team or other external laboratories. In addition, our team performs board range of bioinformatics analysis to assist clients in explaining large amounts of data generated by sequencing, genotyping, microarray, and metabolomics experiments.

Our services are open to everyone, whether you use our wet lab and sequencing services or not. Our bioinformatics staff consists of PhD-level scientists trained in computer languages, statistics, informatics, genetics, and genomics.

Bioinformatics service examples:



Whole Genome
Data Analysis



Whole Exome
Data Analysis



RNASeq
Analysis



Sanger
Sequence Data
Analysis



Microarray Gene
Expression Data
Analysis



Genetic
Evolutionary
Data Analysis



Protein 3D modeling,
Molecular Docking
and Molecular
Dynamics Simulations



Untargeted
Metabolomics Data
Analysis



Pathway Mapping,
Gene Networks



Continuing Education Program

Al Borg Diagnostics is committed to sharing its knowledge and experience in R&D with ambitious students, researchers, and professionals. Our internationally trained laboratory professional team strives hard to provide you with online, offline, or hybrid training programs. All the training programs consist of interactive, concise content and hands-on laboratory data or experiment results components.

Hands-on training programs are expected to benefit students and researchers in expanding their knowledge base and making them proficient in handling lab experiments.

We are open to designing the custom-defined training content based on the client's request. Additionally, Al Borg Diagnostics regularly conducts free online webinars to keep our clients/research community updated with the latest technological improvements in different research areas.

Contact Us

Feel free to contact us if you have any queries, our staff will always be happy to support.

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