

ACOBIOM EXPERTISES

IN GENOMICS, TRANSCRIPTOMICS, PHARMACOGENOMICS, TRANSLATIONAL RESEARCH AND PERSONALIZED MEDICINE

Acobiom at a glance

Acobiom is the French biotechnology company specialized in the discovery and the validation of Biomarkers for diagnostic and therapeutic purposes. The company uses its expertise in-house for developing genomics and pharmacogenomics diagnostic tests. To reach its objectives, Acobiom has developed and continually refined a technology platform combining high-throughput technologies (Sequencing, NGS, qRT-PCR), and proprietary bioinformatic and biostatistical tools, that are capable to process and analyze the generated Big Data.

Acobiom business model is based on two main business lines:

- developing and commercializing (companion) diagnostics, notably for translational research and personalized medicine applications;
- providing services in the fields of genomics, pharmacogenomics, and transcriptomics, for research and diagnostic purposes, as well as for the development of new treatments. The company provides to its clients and partners the benefit of its experience and technologies by offering a range of services that are adapted to the needs and issues at stake for a given project.

Acobiom expertise in diagnostic development

During the course of its R&D and service activities, Acobiom has developed genomic/transcriptomic biomarkers in correlation with therapies/drugs, cognitive score/impairment, disease detection, evolution and prognosis, immune response, vaccination, infectious diseases, and pharmacogenomics. These biomarkers were identified in solid tissues and whole blood and for specific biological questions.

Biomarker discovery platform

Acobiom develops its technology platforms for RNA and DNA analysis based on NGS/Sequencing. These analysis technologies are able to identify and quantify extremely specific nucleic acids that are carrying out exhaustive and objective analyses of all nucleic acids present in the cell. In particular, this includes all types of coding RNA (mRNA) and non-coding RNA (small RNA, pseudogenes, etc) or somatic mutation analysis on FFPE samples.

In order to process and analyze big data generated by high-throughput sequencers, Acobiom uses its proprietary bioinformatic tools and database, as well as biostatistical tools specifically developed for studying the data in question, and designed for the integrated analysis of biological information. Our collaborative approach combines the foresight and ingenuity of our clients with the most integrative and cost-effective infrastructure of sequencing informatics, biostatistics and genome interpretation

Biomarker validation platform

After the biomarker identification stage through NGS/Sequencing, Acobiom selects a set of biomarkers for routine diagnostic kit through Real-Time PCR (RT-PCR) technology. The company designs 384- or 96-well plates with specific primers for a multiple devices (Roche, Applied...) use. Thus, Acobiom has developed a sound background in designing RT-PCR assays for production and manufacturing issues. Acobiom provides RT-PCR kits through manufacturing collaboration.

Diagnostics for Personalized Medicine

Acobiom develops in-house innovative molecular diagnostics dedicated to personalized medicine. For instance, the company is involved in clinical trials/filing for developing (companion) diagnostics associated with new therapies. Within this business line, Acobiom has developed a strong expertise in clinical trials for diagnostic validation and a pipeline of molecular diagnostics.

Acobiom advantages

- ✓ **Over 17 years' experience in customized transcriptomic, genomic and pharmacogenomic analyses:** Acobiom has been developing tools and processes, and has consolidating its expertise in identifying genomic biomarkers for research and diagnostic applications, as well as for helping to develop new drugs through NGS/Sequencing technologies.
- ✓ **Multivariate analyses including Genotype/Phenotype resources:** Acobiom includes DNA, RNA, methylation analyses related to clinical phenotype in its pharmacogenomic studies.
- ✓ **Cutting-edge bioinformatics and biostatistical tools and expertise:** Acobiom leverages its proprietary bioinformatic platform, which can process and analyze millions of pieces of (big) data obtained from next-generation (high-throughput) sequencing (NGS).
- ✓ **No prior information is required to develop new biomarkers:** Acobiom do not need any prior information on pharmacogenomic biomarkers to develop Companion Diagnostic associated with innovative drugs.
- ✓ **Top down strategy for biomarker identification:** Acobiom is using a Top Down approach to identify and validate new biomarkers at each step of the drug/diagnostic development chain.
- ✓ **Several partnerships in health applications:** Acobiom has acquired a sound expertise through biomarker and pharmacogenomic studies performed in different fields of applications: oncology, neurology, infectiology, hematology, inflammation...
- ✓ **Method and process to collect easily blood samples.**
- ✓ **Patents on prognostic biomarkers / predictive biomolecular signature.**
- ✓ **More than 60 scientific publications.**

Acobiom biomarker panel

Biomarkers associated with therapies/drugs

Acobiom has discovered several biomarkers able to identify the responder patient versus the non-responder one leading to determine therapy/drug efficacy:

- Biomarkers for pancreatic cancer efficacy (**currently in phase III clinical trials**, project granted by Bpifrance),
- Biomarkers for Alzheimer disease treatment efficacy (**currently in phase III clinical trials**),
- Biomarker associated with Erythropoietin (EPO) drug abuse (project granted by USADA, AMA, AFLD)...

Biomarkers associated with cognitive score/impairment

Acobiom has identified blood biomarkers able to predict a cognitive score/impairment. These biomarkers are showing Acobiom's capabilities to identify within blood samples biomarkers related to cognitive score. Such biomarkers are able to support the development of new treatment for cognitive impairment (dementia, Alzheimer...) or to support physician within their decision in terms of treatment, training... improving patient cognitive scores.

Biomarkers associated with disease detection, evolution and prognosis

Acobiom has identified biomarkers able to detect disease at early stage and monitor the disease evolution, supporting the physician decision for treatment prescription:

- Biomarkers for stratifying patients with chronic myelomonocytic leukemia in order to adapt treatments appropriately (**currently in phase II clinical trials**),
- Biomarkers for reproduction able to screen the quality of oocytes obtained during IVF procedure.
- Biomarkers for monitoring Alzheimer disease evolution (**currently in phase III clinical trials**)...

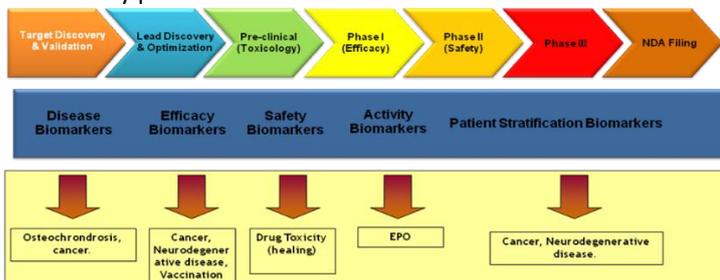
Biomarkers associated with immune response

Through its service business as well as in its in-house developments, Acobiom has identified and validated a panel of biomarkers associated with:

- Resistance of Leishmania infection in human and mouse (EU granted project),
- Efficacy in dog vaccination protocol against Leishmania, Rubarth's disease, Canine Distemper and Rabies (French Ministry of Health granted project),
- Detection of pathogens: Dengue (EU granted project), Hantavirus (EU granted project), Leishmania (AIEA granted project)...

Biomarkers associated with pharmacogenomics

Acobiom has developed expertise at each step of the drug discovery process



Bibliography relative to Acobiom

Biomarkers associated with therapies/drugs

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For more information about **ACOBIOM** and its expertise in genomics, transcriptomics, pharmacogenomics, translational medicine and personalized medicine, please contact the Business Development Department (info@acobiom.com, T: +33(0) 467 419 748).