OUTSMARTING TECHNOLOGICAL CHALLENGES

Microbiology & Infectious Diseases
As players in the health sector, we all have to significantly improve the effectiveness of our R&D by exploiting our own knowledge and capabilities, but also those that exist beyond our organizational limits. Open innovation, integrating internal and external expertise, is a more than ever essential approach to provide new sources of innovation and ensure the development of health products focused on specific patient needs.

BIOASTER, in its capacity as a Technological Research Institute, is fully aligned with this open innovation frame. We aim to translate the results of publicly available research into exploitable innovations that accelerate the development of prognostic, diagnostic, preventive, and therapeutic solutions, so that they can be pursued by companies. Our scientific collaboration is at the heart of this approach, with our expertise in microbiology and infectious diseases, and specifically in diagnostics, vaccines, antimicrobials, and the microbiome.

Thus, BIOASTER aims to assist healthcare-focused companies by offering them knowledge and expertise in technological innovation, to open up new avenues of research, accelerate the development of their products, and remove the technological obstacles that hinder their ambitions.
BIOASTER is a Technological Research Institute (IRT) in health technologies, created at the initiative of the French government and private life science companies.

BIOASTER is a not-for-profit Scientific Cooperation Foundation (FCS) that is dedicated to the study of microbiology and infectious diseases, tackling diseases caused by bacteria, viruses, parasites, and fungi. We offer a new approach to R&D, by integrating the principal scientific and technological disciplines, to better share the risks of innovation.

**KEY FIGURES**

- + 250 research contracts including 66 collaborative projects with academic and industrial partners
- + 100 business and industrial partners around the world
- 18 patents
- + 100 employees of 15 different nationalities
- 10 grants

**Architect and operator of technological solutions in microbiology**

A place dedicated to the innovation of R&D tools in microbiology

Experts in designing and building tailor-made multi-technology approaches

A scientific and technological meeting point to transform your ambitions into reality
Generate more opportunities to accelerate your innovations.
| OFFERS |
|-----------------|-----------------|-----------------|-----------------|
| **MICROORGANISMS** |
| **SAMPLES OF INTEREST** | **MECANISMS OF ACTION** |
| **PROPHYLACTIC SOLUTIONS** | **MECHANISM OF ACTION, HOST RESPONSE, ACTIVITY, PROFILING & EFFICACY OF YOUR ANTIMICROBIALS** |
| Access to well characterized & documented biological samples to explore host-pathogen interactions. | Decipher the mechanism of action triggered by your prophylactic solutions. | Assess Mechanism of action, Host Response, Activity, Profiling & Efficacy of your antimicrobials to efficiently fuel the translational pipeline of new drugs for the benefit of patients. |
| **BIOMARKERS** | **TECHNOLOGICAL DEVELOPMENTS** | **DATA** |
| Identify, characterize, exploit, as a translational tool, companion or diagnostic test. | Developing more targeted, effective and personalized therapies now requires technology to become an integral part of your R&D program. | Face the data challenges in Life Sciences. |
| **IN VITRO / IN VIVO MODELS** |
| Integrated approach from relevant in vitro model engineering to in vivo validated models to de-risk and accelerate your product development. |
Provide access to technological solutions that accelerate your product development.
<table>
<thead>
<tr>
<th>TECHNOLOGIES</th>
<th>MICROBIOLOGY &amp; MOLECULAR ENGINEERING</th>
<th>PRECLINICAL MODELS &amp; IMAGING</th>
<th>BIOASSAYS, MICROSYSTEMS &amp; OPTICAL ENGINEERING</th>
<th>DATA SCIENCE, DATA MANAGEMENT, &amp; DIGITAL SOLUTIONS</th>
<th>CLINICAL OPERATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design and develop original scientific and technological solutions to accelerate microbiological research for the benefit of animal and human health.</td>
<td>Provide innovative animal models/technologies for the study of infectious diseases and the microbiome.</td>
<td>Engineer and customize bioanalytical tools for deciphering, detecting and characterizing infectious disease pathogens, evaluating vaccines and therapies on pathogen and on the immunological host response.</td>
<td>Bring the continuum of Digital Technologies and Advanced Data Analytics Approaches to serve project’s Data Science &amp; Data Management objectives.</td>
<td>Give you access to well-characterized, tailored, high-value human biological samples to accelerate your health-product development projects.</td>
<td></td>
</tr>
</tbody>
</table>
Combine our expertise with yours to take down technological barriers and achieve your ambitions.
<table>
<thead>
<tr>
<th>Fields of Application</th>
<th>Antimicrobials</th>
<th>Vaccines</th>
<th>Microbiome</th>
<th>Diagnostics &amp; Companion Diagnostics</th>
</tr>
</thead>
</table>
| **Antimicrobials**    | • Hit identification and lead selection  
• Lead optimization  
• Drug candidate characterization | **Vaccines** | • Decision-making regarding novel vaccine targets  
• Personalized medicine and patient stratification  
• Characterizing the host response  
• Improving vaccine production | **Microbiome** | • Microbiome research  
Access key information to take into account microbiome  
• Host-associated interactions  
Understand and leverage microbiomes  
• Microbiomes and biomarkers/companion diagnostics |
| **Diagnostics & Companion Diagnostics** | **Vaccines** | **Antimicrobials** | **Microbiome** | **Diagnostics & Companion Diagnostics** |
Our story

2012
- Creation of the IRT
- 3 employees (and numerous supports)
- 4 fields of application: Antimicrobials, Vaccines, Microbiome, Diagnostics

2013
- 61 employees
- Structure: Paris 600m² / Lyon 820m² (offices and labs)
- 15 projects

2015
- 100 employees
- New building in Lyon with 2,200m² of laboratories and 1,360m² of offices, in addition to the 850m² premises in Paris, 7 technological units
- 31 projects

2021
- 110 employees from 15 different nationalities

2022
- 250 research contracts including 66 collaborative projects (since 2012)

2023 & beyond...
- A story to write together

Founders
bioaster.org