GNOTOBIOLOGY, THE SOLUTION TO PERFORM PRE-CLINICAL STUDIES WITH CONTROLLED MICROBIOTA...

- Control of genetics, microbial, environmental and dietary conditions
- Functional insights into both host and microbiota
- Validation of in vitro results and pre-clinical evaluation of the efficacy and safety of new therapies

ACCESS MICROBIOME FOR DRUG DEVELOPMENT
ENHANCE MICROBIOTA FITNESS TO GIVE A BOOST TO HEALTH
AND CRUCIAL EXPERTISE TOWARDS TOMORROW’S HEALTHCARE

**MICROBIOME**
- Host-microbes-environment interactions and impact on health, aging & diseases
- POC on a probiotic bacteria reversing the effects of malnutrition

**PROBIOTICS**
- Probiotic bacteria screening & fecal microbiota transplantation to treat dysbiosis
- Screening of probiotic bacteria improving microbiota fitness and intestinal barrier function

**DRUG**
- Reproducible model to assess drug impact on microbiota
- Quantification of the impact of chemotherapy on the intestinal microbiota

**ANTIMICROBIALS**
- Antimicrobials comparison on colonization resistance and translocation studies
- Selection of mono & combined antimicrobials with low impact on commensal bacteria

**DYSBIOSIS**
- Etiologies of opportunistic infectious and inflammatory diseases
- Characterization of dysbiosis-induced pathogenesis & evaluation of treatments

**APPLICATION EXAMPLES**
- Example

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BIOASTER
WE COLLABORATE WITH ACADEMICS AND CLINICAL RESEARCH SCIENTISTS, STARTUPS AND INDUSTRIAL COMPANIES

BIOASTER GNOTOBIOLOGY EXPERTISE IN A NUTSHELL...

- A unique set of integrated technologies and in-house innovations
- Continuous development of tomorrow pre-clinical models
- Ethically responsible design and management of pre-clinical studies

Which benefit over conventional models?
Increased reproducibility through gut microbiome standardization
Enabling microbiome exploration and reshaping through drug development
...with a whole set of in-house innovative technologies to develop new models

- In silico design of bacterial consortia
- Isolation & culture of aerobic/anaerobic bacteria
- Collection of murine & human intestinal bacteria
- Bacterial identification by:
  - Biochemical tests
  - MALDI-TOF MS
  - 16S qPCR
  - 16S sequencing
  - Shotgun sequencing
- Microbiota monitoring by microfluidic qPCR

C57BL/6 gnotobiotic mouse model with simplified intestinal mouse microbiota, including:
- SOPF & GF controls
- Phenotyping data
- MALDI-TOF database
- Specific microfluidic qPCR test for microbiota monitoring
- Specific FISH for bacteria imaging
BIOASTER GNOTOBIOLOGY EXPERTISE RELIES ON STATE-OF-THE-ART FACILITIES & EQUIPMENTS...

Germ-free/Gnotobiology facility with 3 housing rooms and 1 fully equipped experimental laboratory

Microbiology lab for the isolation, culture and identification of aerobic/anaerobic bacteria

Histology lab for the characterization of host-microbes interactions
... AND A MULTIDISCIPLINARY ECOSYSTEM

Our specialized technological units working in synergy to design integrated solutions

- Risk and cost sharing for your innovation projects
- International scientific network & partners
- Research and development, collaborative projects or services
- Professional project management
- Unique state-of-the-art equipment
- ISO9001 quality management systems
- 80+ scientific experts