

INRAE center
Expert in metagenomic
research for human and
animal microbiome



www.mgps.eu

MetaGenoPolis - INRAE
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by **INRAE**



OUR IDENTITY

MetaGenoPolis (MGP)
is an INRAE center, expert
in gut microbiome research
applied to health and nutrition



PIA 19 M€ grant (2012-2019)
Laureate: 5.7 M€ grant (2020-2025)



Our expertise

- An ecosystem of microbiome scientists and experts to bring our experience to your project
- High-throughput metagenomics to characterize microbiome and its biological function



Our strengths

- ISO 9001 certified and automated process with the International Human Microbiome Standards
- End-to-end microbiome analysis services
- Ethical guidance with the center UCLy (Lyon Catholic University)
- Scientific excellence with +100 publications in metagenomics including 17 publications in top journals of the Nature group



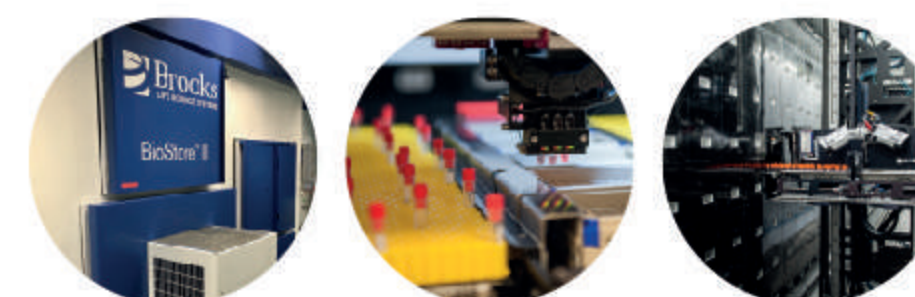
Our ambitions

- Accelerate the gut microbiome science to better define the links between microbiome, health and nutrition
- Accelerate partnerships with industries for the development of nutrition and health innovations

OUR MICROBIOME OFFER

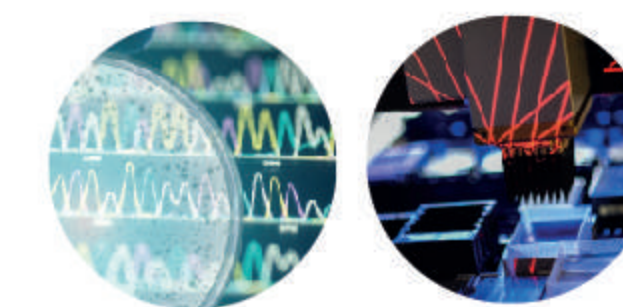
Diversity of experts and technologies
to custom projects tailored to the partners' needs

Biobanking



- Secure storage of your samples
- Robust, automated and standardized process

Discovery



- Mine the microbiome as a source of innovative biocompounds
- Explore interactions between gut bacteria and human cells to discover new drugs



Pre-clinical Research

- Ex vivo with fermenters



- In vivo with translational animal models (germ free, inflammatory models...)



Clinical Research

- Biomarkers associated with dysbiosis
- Impact of your product on the gut microbiome
- Stratification of individuals





SAMBO

Biobanking & DNA extraction

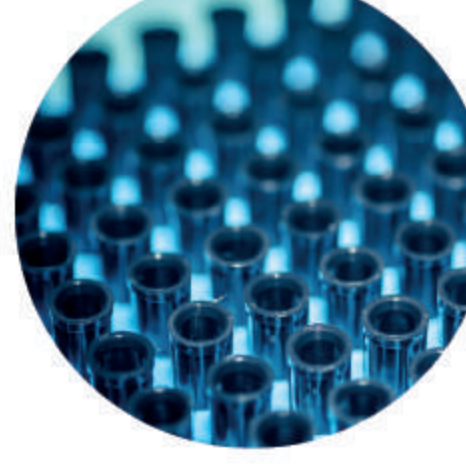
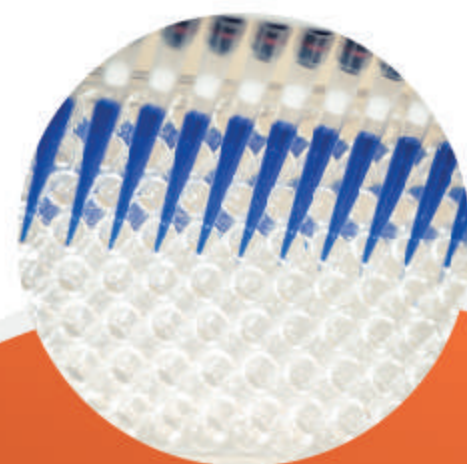
Compliance, conservation and quality of your samples over time with our biobank

- Storing samples from an ongoing clinical study / cohorts
- 600,000 samples storage capacity



Automated and high quality DNA extraction of your samples with the world-standard methods

- Obtaining large amounts of DNA with maximum quality for unbiased analysis



OUR CUTTING-EDGE TECHNOLOGIES



METAQUANT

Quantitative metagenomics

Modeling complex microbiome diversity and composition with Whole Genome Sequencing



- High-resolution analysis with Metagenomic Species Pan-genomes (MSPs)
- High performance computing facility with 1,000 cores

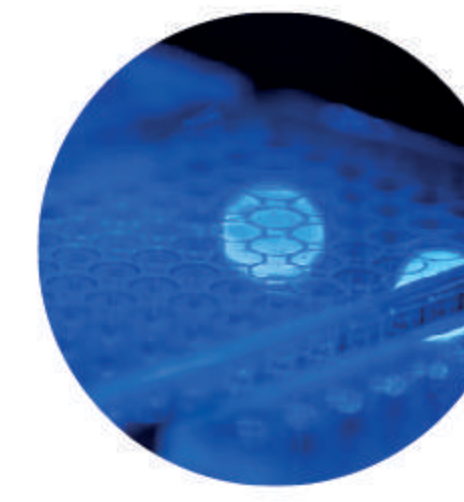
METAFUN

Functional metagenomics

An automated and certified process ensuring high-throughput screening

- 575,000 clones ready to be tested (with unknown bacterial genes). 18 libraries from healthy, obese, Crohn's, CRC, Ileum/ mucosal

- Analysis of the entire genome of all microorganisms belonging to an ecological niche, including those which are not cultivable



PHARMACEUTICAL APPLICATIONS

- Identification of bacterial biomarkers associated with **dysbiosis**: microbiome signatures used as a diagnostic or prognostic tools

- Stratification of individuals to a better **personalized medicine**: microbiome responders vs non responders, side effects of drugs

- Impact of drugs on the **gut microbiome**: composition, functions, level of intestinal antibiotic resistance genes/resistome, resilience

- Identification and culture of new **species with function of interest**: next generation probiotics...

- Identification of microbial genes & metabolites able to interact with human **cells**: anti-inflammatory, antiproliferative, satigenic, gut barrier effect ...

- Identification of genes of interest **for your product** (probiotics, commensal bacteria...) **on targeted intestinal functions** (endocrine, metabolism, gut barrier, immunity)



AGRI-FOOD APPLICATIONS

- Impact of prebiotics, probiotics, functional **food on the gut microbiome**: composition, functions, SCFAs...

- Tracking of your probiotics and live **biotherapeutic strains in the gut microbiome**

- Identification of probiotics of interest: new isolates/ mode of action

- Stratification of individuals to a **personalized nutrition**: differentiation of good and poor responders to specific diet

- Impact of various diet: fermented / vegan / low FODMAP/ mediterranean / high-fibers...

- Guidelines to design a new **functional food product** benefic for the gut microbiome

- **Animal health**: Impact of drugs, prebiotics, probiotics, food product on the gut microbiome



Tell us about your project !



contact@mgps.eu