RÉPUBLIQUE FRANÇAISE
Liberté Égalité Fraternité

INRAE

Consortium
2023–2024

HOLOAE

Livestock holobionts network

As part of their new strategic plans, the management teams from the MICA-GA-PHASE-SA divisions have joined forces to research the "Livestock holobionts" theme.

To ensure livestock production is sustainable and address health issues within the One Health concept, we need a better understanding of the interactions within holobionts and between animal hosts and their microbiota.

The network will be run by two coordinators and supported by a seven-person steering committee.

It will involve several INRAE teams with different areas of expertise. The consortium will strive to:

1. connect and organize the INRAE community working on livestock holobionts,
2. position INRAE at the cutting edge of research into these topics on an international scale by encouraging the development of joint research projects and publishing reviews.

Coordinators
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Keywords
Holobiont, microbiota, livestock animals, pathogens

Participating INRAE units
EPIA
GABI
GenPhySE
Herbivores
ISP
STLO
UMRH
VIM

Objectives

This network focuses on the gut and other microbiota of ruminant and monogastric livestock animals. Although studies on humans are not directly included, discussions regarding the approach will be held with teams working on this topic.

Theme 1 of the HOLOFLUX metaprogramme revolves around increasing our knowledge of livestock holobionts to improve our understanding of mutual host–microbiota–pathogens interactions. This knowledge will make it possible to identify levers for action to predict and control phenotypes or susceptibilities linked to animal health and the productive and environmental efficiency of the animals; this component is integrated into Theme 3 of the metaprogramme.

This network will connect a scientific community that is currently siloed (by species, organ or methodological approach).

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Partners

INRAE unit	Expertise	INRAE division
EPIA	Microbial community dynamics and animal health management	SA
GABI	The role of the interaction between genetics and gut microbiota in the health of chickens and pigs	GA
GenPhySE	Role of the microbiota and its metabolites in gut development in pigs and rabbits; genetic determinism of rumen microbiota in sheep	PHASE, GA
Herbivores	Ruminant gut microbiota; relationship with phenotypes of interest (methane emissions, feed efficiency)	PHASE
ISP	The role of the gut microbiota in *Salmonella* infection in monogastric animals	MICA
STLO	Microbiota and bovine udder health	MICA
UMRH	Ruminant digestive microbiota and its role in animal performance and health	PHASE
VIM	Interaction of lung microbiota and juvenile immunity in respiratory health	SA

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