

SOA11
**KNOW-PATH - Knowledge on priority pathogens, infectious diseases
and their detection methods**

(OO3 Action 1)

PROJECT TITLE: Basic knowledge on priority pathogens and infectious diseases

Priority area	Operational objective
The main focus will be to gain basic knowledge on priority pathogens of pig, poultry, ruminants and aquatic animals as well as over the hosts species, host adaptation and biomarkers for priority foodborne and neglected parasitic diseases. The project will investigate all biological levels from molecules to live animals	The aim is to identify possible diagnostic markers of these pathogens (eg. Bacteria, parasites, viruses, fungi, prions, including resistance patterns)
Key words	Partner participation
Livestock pathogen, aquatic pathogens, biomarkers, host-pathogen interaction, foodborne pathogens, pathogen detection	AGES, NVI, WR, ISS, EDI-IVI, CIRAD, SURREY, FLI, INRAE, UNIPD, SSI, EULS, SVA, UCPH, DTU, DEFRA, ANSES, INIAV, PIWet, IZSLER, UGent, UL, IZS - Teramo, Sciansano, CSIC, IZSLT

Project summary

The project concentrates on priority pathogens in livestock, specifically targeting viruses, bacteria, and parasites in pigs, poultry, ruminants, and aquatic animals. It aims to advance knowledge on host species adaptation, biomarkers for significant foodborne and neglected parasitic diseases, and improve detection methods. By investigating across all biological levels, from molecules to living animals, the aim is to improve the methods for detecting these diseases, ultimately optimizing health management in livestock production.

Project objectives	Outcomes and impacts
<ul style="list-style-type: none"> • Task 1: Monitoring pathogens, sharing information, and engaging stakeholders. • Task 2: Acquiring knowledge on pathogens in pigs, poultry, and ruminants, including RNAseq analyses, development of new detection methods, and gap analysis. • Subtasks: Focus on specific pathogens, identifying virulence and AMR genes, characterizing host adaptation and transmission, as well as environmental reservoirs. • Task 3: Enhancing knowledge on infectious pathogens in aquatic animals, including identifying molecular markers and understanding environmental conditions. • Task 4: Developing rapid detection systems and in vitro tests for parasites, as well as molecular and clinical epidemiology 	<ul style="list-style-type: none"> • Insight into Pathogen Biology: Deepening understanding of how pathogens operate, supporting more effective treatments and control measures. • Identification of Knowledge Gaps: Highlighting research needs for various pathogens and hosts, directing future scientific efforts. • Discovery of New Biomarkers: Enabling precise monitoring of pathogen presence in animals, improving disease management strategies.

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