



EMERG'IN

Research infrastructure for the control of animal and zoonotic emerging infectious diseases through *in vivo* investigation

EXPERIMENTAL INFECTIOLOGY PLATFORM



The **Experimental Infectiology Platform (PFIE)** brings together resources and expertise to perform **experimental infections** on **farm animals** (cattle, horses, sheep, goats, pigs, poultry) but also on **laboratory animals** (rodents, lagomorphs, ferrets) and **wildlife** (wild boars, badgers, etc.).

The PFIE comprises 12,000 m² of Biosafety Level 2 (BSL-2) and Level 3 (BSL-3) facilities, enabling the study of **high-impact animal diseases (epizootics)** and **human diseases (zoonoses and other)**, as well as the manipulation of **genetically modified pathogens (GMOs)**. The PFIE also has the capacity to breed **farm animals with specific genetic and health statuses**.

The PFIE benefits from the skills and expertise of 46 staff members, including animal technicians, research and innovation officers, veterinarians, a quality engineer, a biosafety risk manager, maintenance technicians and administrative staff.

The PFIE is labeled as an **INRAE ISC** (Collective Scientific Infrastructure) and an **IBiSA** infrastructure. It is also part of **several regional networks** (FéRI: Infectious Disease Research Federation of the Centre-Val de Loire region), **national networks** (EMERG'IN) and **European networks** (Vetbionet ERG, ISIDORE, AVITHRAPID).

The PFIE is **ISO9001** certified for its quality management system and is committed to an **Environmental Management System (EMS)** approach, certified to ISO 14001.

The PFIE is a national infrastructure broadly open to the scientific community, including public and private, national and international institutions.



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A platform focused on the biology of livestock and wildlife infections



Contribute to the elucidation of host-pathogen interactions and foster innovative approaches to reinforce animal health

- Study of the **pathophysiology of infections** (immunology)
- Development and execution of ***in vivo* infectious challenges**
- Evaluation of **diagnostic tests** and innovative tools for **controlling infections** (vaccines, immunostimulants, antimicrobials, disinfectants)

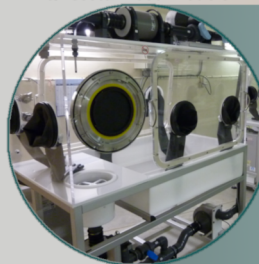
Our available animal models include:

- Livestock:** Ruminants (Tuberculosis, Cryptosporidiosis, Bluetongue, Q Fever, Toxoplasmosis, BRSV infections, Rift Valley Fever, Schmallenberg disease), **Swine** (Influenza, Swine Reproductive and Respiratory Syndrome, Hepatitis E), **Poultry** (Influenza, Marek's disease, Campylobacteriosis, Salmonellosis, Colibacillosis, Coccidiosis), **Equine** (Herpesvirus, Trypanosomiasis, Viral Arteritis)
- Wildlife:** Wild boar (Trichinellosis), Badger (Tuberculosis)
- Laboratory animals:** Rodents (Cryptosporidiosis, COVID-19, Tuberculosis, Flu), Ferret (Tuberculosis), Rabbit (Pasteurellosis, Colibacillosis, Clostridiosis)
- Customised models**



BSL2 and BSL3 facilities:

- 530 m² of experimental BSL3 facilities, including: laboratories, surgery and autopsy rooms
- 700 m² of experimental BSL2 facilities
- 30 isolators (poultry and rodents)
- Thermal decontamination (autoclave) of solid and liquid waste
- Airborne surface disinfection (ASD)



Supply of animals with specific health and genetic status:

- Controlled health status (ovine)
- SPF* (poultry), inbred and congenic lines
- SOPF** (mouse), transgenic lines
- Germ free and gnotobiotics (poultry)
- Decontamination of murine strains by aseptic hysterectomy



* Specific Pathogens Free

** Specific and Opportunistic Pathogens Free

A range of support services:

- Surgery - Anesthesia in containment :**
Maintenance under gaseous general anesthesia with mechanical/assisted ventilation, up to 24h
Placement of surgical implants, Creation of intestinal loops, broncho-alveolar lavage
- Medical imaging in containment :**
Ultrasound-guided puncture (CSF-pony, urine-pig), ultrasound-guided catheter placement (pig)
Intrapulmonary inoculation using Endo-fibroscopy (cattle, badger, pig)
In vivo imaging on small animals on rodents and poultry
- Hematology and blood biochemistry
- Telemetry



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