



Centre for Molecular Medicine and Molecular Imaging at the Regenerative Medicine and Biomedical Technologies Unit managed by Fondazione Ri.MED and the Department of Diagnostic and Therapeutic Services of ISMETT

Center for Preclinical Research on small size animals at the Istituto Zooprofilattico Sperimentale della Sicilia

Centre for Preclinical Research on large size animals at the Istituto Sperimentale Zootecnico della Sicilia

A highly qualified multidisciplinary **training** program is available, as part of the ISPeMI project, to the professionals involved in the Institute's activities – medical doctors, biologists, veterinarians, technical staff and animal technologists - including an on-the-job training period at the three centres involved, which have been improved with the funds provided by the Italian national operational program (PON) for **infrastructure**:

includes laboratories of cell biology, genomics, proteomics and imaging on cell systems and humans. The Centre includes a bio-banking area (for pathological specimens, cells, nucleic acids). Radiological and endoscopic equipment for human use include a 3 Tesla magnetic resonance imaging complete with functional imaging and spectroscopy software, and a system for storing images.

includes animal facilities for rodents and lagomorphs, an experimental surgery and microsurgery area, a preclinical testing laboratory for cell biology, genomics and proteomics studies and a molecular imaging laboratory for analysis of experimental small animal models. The molecular imaging laboratory includes a room for magnetic resonance imaging, optical imaging equipment and an ultrasound scanner. The images will be stored and processed in specific workstations equipped with dedicated software.

characterised by a swine facility, including Precision Livestock Swine Farming (PLSF) for standardised production of Specific Pathogen Free (SPF) animals, an experimental surgery area which includes the equipment required for radiological and endoscopic procedures, and a bio-banking area (experimental biological samples, cells, nucleic acids, seed bank). Image storage software is also available.



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ISPeMI  
Istituto di Sperimentazione Preclinica e Molecular Imaging

## FROM BIOMEDICAL RESEARCH TO HUMAN HEALTH

Fondazione Ri.MED, together with Istituto Zooprofilattico Sperimentale della Sicilia "A. Mirri" and Istituto Sperimentale Zootecnico per la Sicilia, is implementing the **creation of a multicentre and interdisciplinary cross-company Institute** for preclinical research and molecular imaging (**Istituto di Sperimentazione Preclinica e Molecular Imaging**): the new Institute **will carry out the entire process of preclinical research** through an integrated approach, and **will translate the progress of biomedical research into patient care**.

Bringing results from the bench to the patient's bedside is a time consuming and challenging process. This includes the deep understanding of the biological mechanisms underlying disease, the scientific validation of the results and the proof of safety and efficacy of the innovative approaches through clinical trials.

ISPeMI will approach the scientific validation and regulatory issues creating a functional and IT network of 3 centres with complementary expertise. The collaboration will cover research activities and organizational issues, and will also offer the opportunity to benefit from services compliant to current quality requirements.

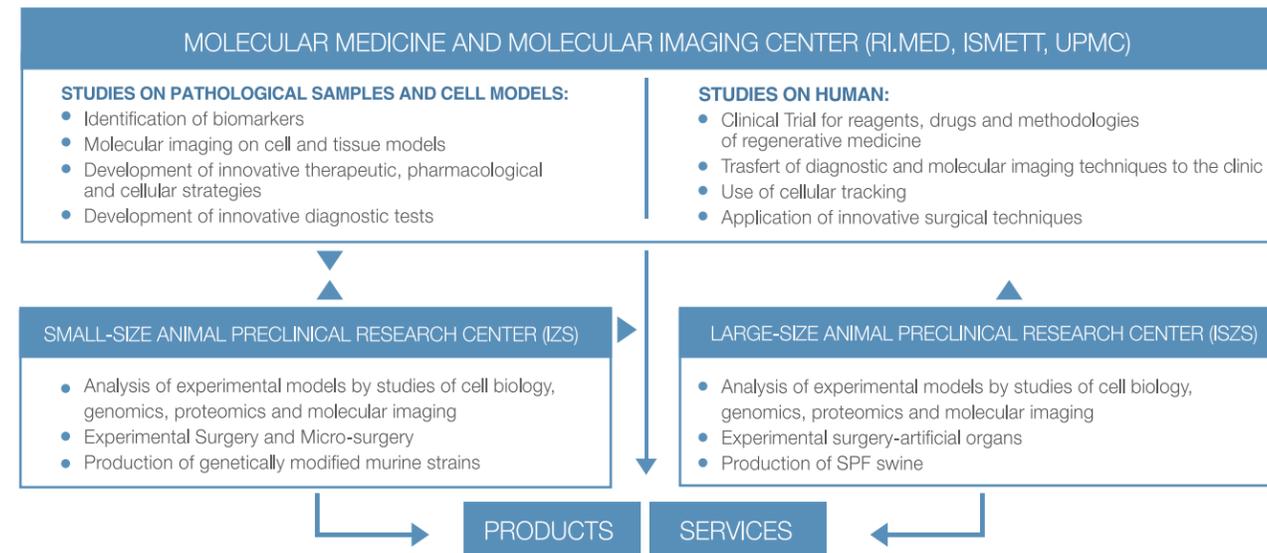
This makes ISPeMI a unique institution, able to develop products and methods covering potentially all sector of industries and technologies involved in the Healthcare field. The Institute will carry out a variety of activities with high scientific and technical content, offering good potential for international business opportunities.

## Biomedical Research Activities

The opportunity to collaborate with ISMETT (an internationally renowned clinical centre specialized in the study and treatment of end-stage organ diseases) and to benefit from the advice offered by reference bodies on regulatory issues (such as the Italian National Institute of Health "ISS" and the Italian Biological Resource Centre "CNRB"), will strengthen the Institute's ability to **provide products that can be immediately used by biotechnology companies** (diagnostic tests, antibodies, gene products, recombinant proteins, etc.) **and industries involved in drug therapies and/or advanced treatments** (cells, products for tissue engineering and gene therapy).

## Training Activities

Thanks to its know-how and expertise, the Institute will be fully qualified to provide **consultancy services** (e.g. medical and veterinary advice during video-laparoscopic and open-surgery on surgical, microsurgical and experimental embryology techniques), **training activities** for national and international private and public institutions (management of optical image and radiological equipment for small animals and diagnostics, training highly qualified personnel such as radiology technicians, biologists, physicists and medical doctors), as well as **scientific dissemination activities**, fostering initiatives focused on cooperation and dissemination of results, which can spread from Sicily to the entire Mediterranean basin and beyond.



## Service Activities

In addition to providing individual services, ISPeMI will be able to perform **all steps of the translational process**, including **preclinical research** in small - and large - size animal models, thus ensuring a **quick development of innovative diagnostic and therapeutic approaches** readily applicable, patentable and marketable.

ISPeMI will provide a wide range of services to private and public entities in Italy and abroad, ranging from the development of diagnostic technologies (tests for molecular and/or protein biomarkers, diagnostic procedures with smart systems, diagnostic imaging procedures) to products for drug therapies, advanced and interventional therapies (drugs, cell therapy, gene therapy, tissue engineering, experimental surgery, clinical and interventional radiology), provided in accordance with the quality requirements established by current regulations (Quality Management System, GLP and GMP).

