



EATRIS, providing the right tools, at the right time, for vaccine development in a pandemic: *What have we learned from COVID-19?*

13 June 2024, Flanders Pitch and Match, Leuven, Belgium

COMMENT | 28 January 2022

A call to action for translational sciences in COVID-19 and future pandemics

Meet the partners



www.translationtogether.org

Five Priorities



Establish a global ‘safe-zone’ for open and real-time sharing of precompetitive data



Build flexible and responsive infrastructures for critical drug development resources.



Establish adaptive funding structures.



Improve tracking and coordination to avoid undesired duplicative efforts.



Work towards establishing and maintaining public health and pandemic readiness.

Who we are

Facilities, resources and services to support cutting edge research



EATRIS countries

Bulgaria, Croatia, Czech Republic, Finland, France, Italy, Latvia, Luxembourg, Netherlands, Norway, Portugal, Slovenia, Spain, Sweden



150+
Research Institutes



5 Scientific Platforms

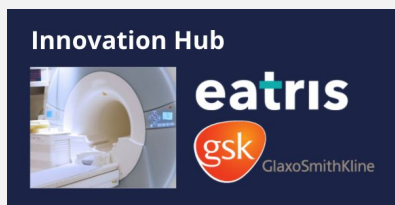
- ATMPs
- Biomarker
- Imaging & Tracing
- Small Molecules
- Vaccine, inflammation and immune monitoring



Legal status

Non-profit, ERIC legal status

Examples of key actions

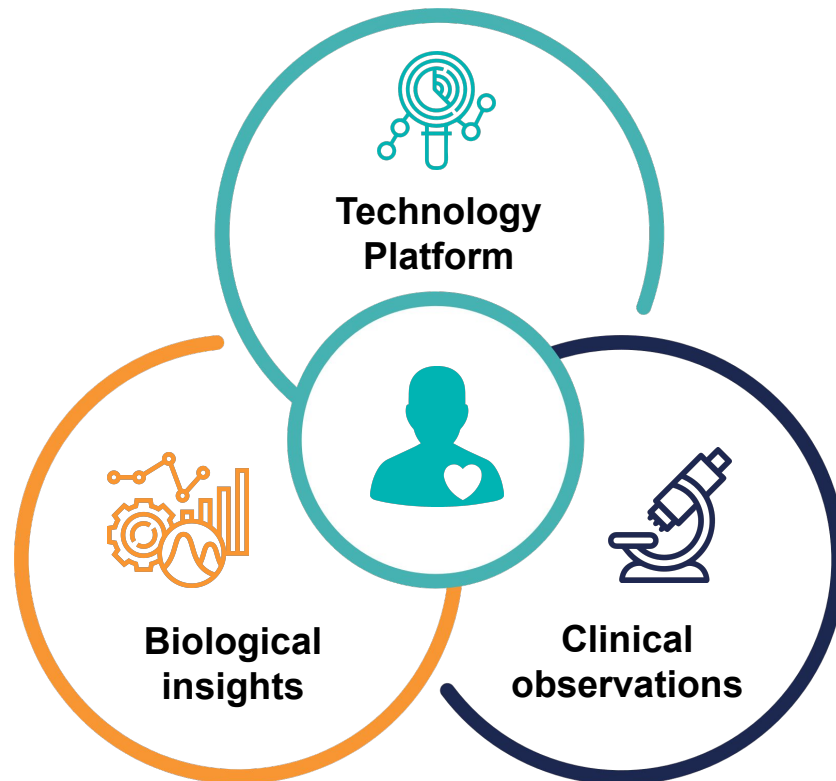




To accelerate the translation of research discoveries into patient benefit.

We **support, using our capacities and expertise** academia, industry, patients and policy makers.

What do we do



1

User access research and expert services

2

Develop new research tools

3

Provide education and training

4

Improve conditions for translation

Five Scientific Platforms



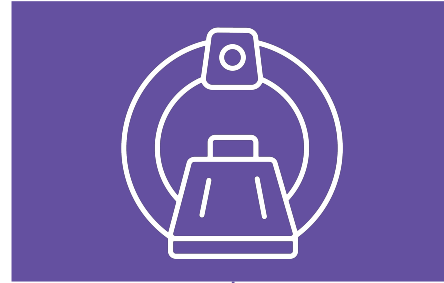
ADVANCED THERAPY MEDICINAL PRODUCTS

Tissue engineering,
Gene therapy, Cell
therapy, GMP
facilities



BIOMARKERS

Biobank facilities,
Multiplexed
immunostaining,
Deep genome
sequencing



IMAGING AND TRACING

(pre-clinical) PET
imaging, GMP
tracer development
and production,
(Ultra) high field
MRI, Optical and
hybrid imaging



SMALL MOLECULES

Advanced screening
(also in 3D
cultures),
Development of
xenograft and *in
vivo* models, Drug
(re-)formulation,
(Pre-)clinical
validation
nanomedicines

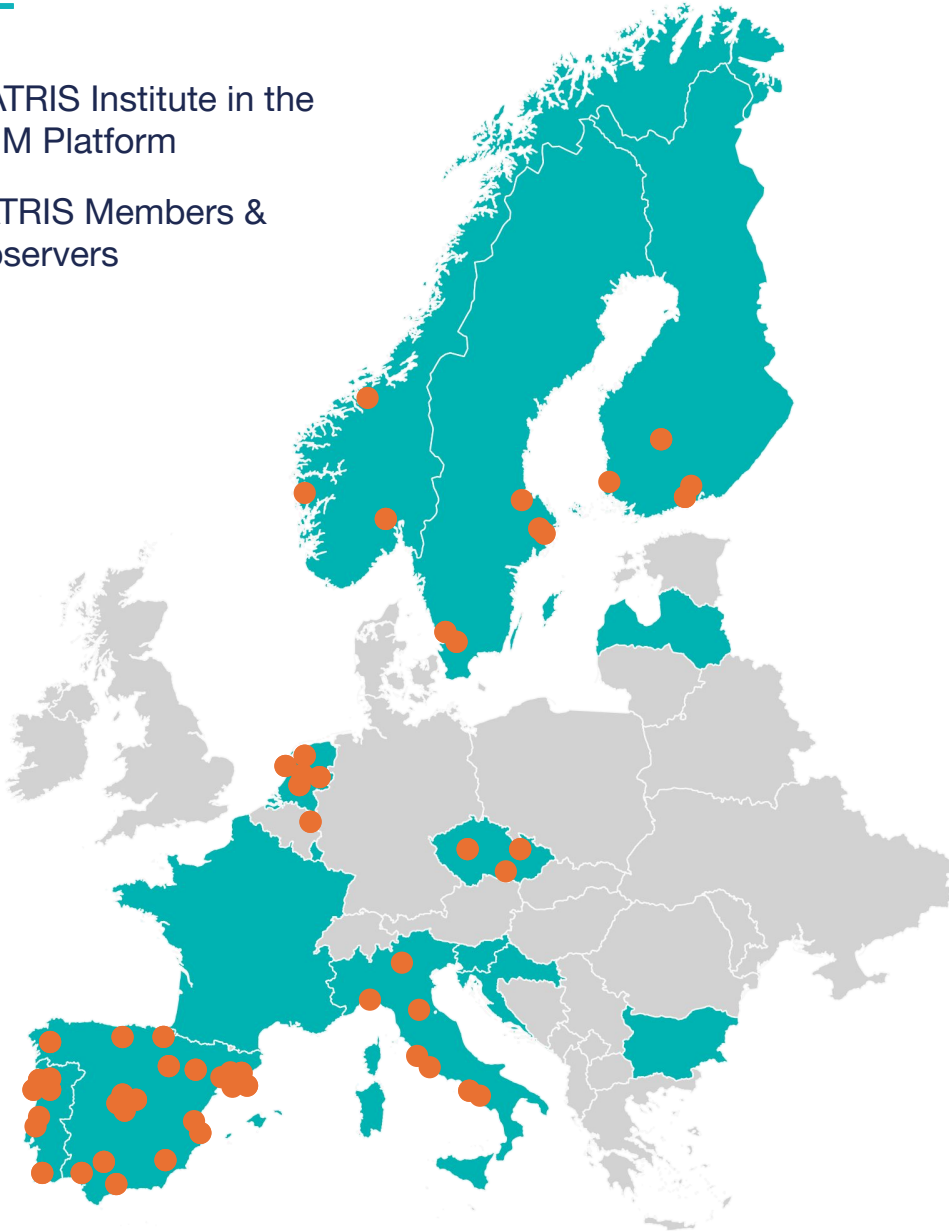


VACCINE, INFLAMMATION AND IMMUNE MONITORING

Antigen
characterisation,
Vaccine
formulation,
Process
development

Lets focus on the Vaccine Platform!

- EATRIS Institute in the VIIM Platform
- EATRIS Members & Observers



- 18 European high-end facilities
- Specialised GMP manufacturing facilities covering USP and DSP; Formulation & adjuvantation
- Animal facilities up to BSL3
- Animal models including non-human primates, SARS-COV-2 challenge Models, and GLP-toxicology
- Pre-clinical models and advanced technologies to monitor the immune system-
 - Advanced In-Vitro 3D models-Organoids, Microfluidic Devices
 - In-Vivo Imaging Technologies to Monitor the Immune System
 - High-throughput approaches for immune studies (Immunomics)



eatris

**COVID-19
Research
Activities**

**EATRIS COVID-19
Research Forum**

**43 Institutions
100 Members**

**Support
research
policy**

**Support
academic
translational
research**

**Accelerated
drug &
vaccine
services**

What Type of Technologies and Expertise?

eatris

Systems level of characterization
of immune cells and tissues

nCoV challenge studies in mouse,
ferret and non-human primates
(NHPs) under BSL3+

Advanced preclinical models
including NHPs with advances
analytical readouts

Immune monitoring and
virological assays



**Technologies and expertise
across the EATRIS COVID-19
research forum**

High throughput screening
supporting diagnostics, genotyping,
phenotyping and drug repurposing

Clinical isolation units

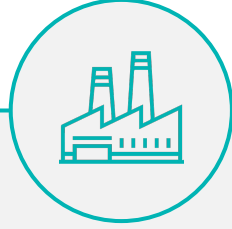
Expertise on pharmacology and
protein-drug interaction modeling

Regulatory support

Research services to SME, academia, governments



45 Project Requests



20 Industry Requests



23 Academic Requests

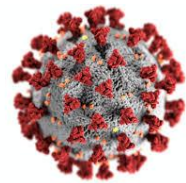


2 Governmental Requests

Typical study requests

Regulatory Advice

Developing a vaccine consisting of the SARS-CoV-2 Spike Receptor Binding Domain (RBD) displayed on Virus-Like Particles



Virus Production

Expert advice to produce virus and establish BSL-3 facilities

In vivo studies

Immunogenicity studies in animal models for challenge against the SARS-COV-2 virus



Rapid Test development

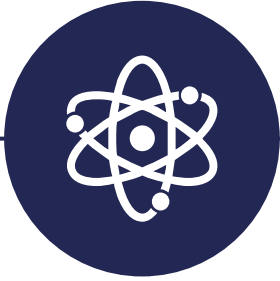
Validation testing of rapid LAMP PCR-Based system in Basque Healthcare system

MoA studies for Repurposing Drugs

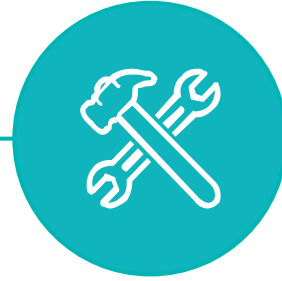
Animal models and MoA studies for repurposing drugs



Offering services to Industry



Access to academic
expertise
technology
facilities



Validated **tools**
that **improve** your
development
programme



Facilitate your
public-private
collaborations

Partnering with industry



What's in it for you?



Provide fast access to high-end academic expertise



Expert advice



Single point of contact



No cure-no pay partner identification



Regulatory compliant research



Translational trajectory of project optimized



Multi-centre R&D projects facilitated

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ISIDORe

Integrated Services for Infectious
Disease Outbreak Research



WHY ISIDOR_e?

The COVID-19 pandemic has confirmed that there is a **crucial need for a higher capacity of preparedness and responsiveness to epidemic-prone pathogens** in Europe and globally.

The recent decades have already demonstrated that the **(re-)emergence and globalization of infectious diseases are no longer abstract long-term predictions** from the scientific community; they are a tangible reality.

For the future, the question is **not “if” an outbreak/epidemic will happen, but rather “when” it will and “which” epidemic-prone pathogen** will be involved.

Europe and the world need to be better prepared for future infectious disease health threats

WHAT IS ISIDORe?

INTEGRATED SERVICES FOR INFECTIOUS DISEASE OUTBREAK RESEARCH

ISIDORe supports scientists and their research on **epidemic- and pandemic-prone pathogens** and the development of medical countermeasures.

LARGE-SCALE
MULTIDISCIPLINARY
CONSORTIUM
ADDRESSING USERS'
NEEDS

FUNDING	€21 million (European Commission)
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SERVICES	300+
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PARTNERS	153
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Provided by **17 European Research Infrastructures** and **Networks** with service providers in 32 Countries

ISIDORE EXPERTISE



+ National surveillance network:
EMERGEN

WHAT DO WE OFFER?

ISIDORE offers
free access to a
one health-driven integrated
portfolio of research services and
resources

FREE ACCESS TO RESEARCH RESOURCES, SERVICES AND EXPERTISE

We provide free access to a comprehensive portfolio of high-quality services that support user projects.

ACCESS CALLS FOR PROPOSALS

The provision of research services is organised through calls for proposals and the selection of research projects to access ISIDORE resources for free.

DEVELOPMENT OF NEW SERVICES

We conduct Joint Research to offer the most advanced, innovative and cutting-edge catalogue of services possible.

OUR CATALOGUE OF SERVICES





ANALYTICAL SERVICES

PROVIDED BY
Instruct, Euro-BioImaging,
VetBioNet & Emergen, Infravec

Get access to cutting-edge services & technologies for structural biology, imaging & sequencing



CELL MODELS

PROVIDED BY
VetBioNet & ERINHA

Browse our extensive range of 2D & 3D models for characterizing disease infection & choose the best option for your research



IN VIVO MODELS

PROVIDED BY
VetBioNet, Transvac,
Infrafrontier & ERINHA,
Infravec

Find out about and get access to our wide range of in vivo models and expertise for advancing your research



IMMUNO-MONITORING & PROFILING

PROVIDED BY
EATRIS, VetBioNet, Infrafrontier,
Euro-BioImaging & ERINHA

State-of-the-art services for deciphering the immune response



SUPPORT FOR DIAGNOSTIC & THERAPEUTIC DEVELOPMENT

PROVIDED BY
EU-OPENSREEN & ERINHA,
Infravec

The best of chemical biology for developing the next prevention and intervention tools



SUPPORT FOR VACCINE DEVELOPMENT

PROVIDED BY
Transvac, VetBioNet & Instruct

Boost the development of your vaccine candidate.



CLINICAL SAMPLES

PROVIDED BY
BBMRI

Get access to human clinical samples from the world's biggest biobanking directory



REGULATORY ADVICE, TRIAL PREPARATION & ACCESS TO CLINICAL TRIALS

PROVIDED
BY EATRIS & ECRIN

Bring your countermeasure to the next level by getting support for market authorization, trial preparation & operations, and even access to clinical trials



SOCIAL SCIENCES & EPIDEMIOLOGY

PROVIDED BY
SoNAR GLOBAL & Infravec

Efforts to tackle pandemics may be ineffective if complex social, political, economic and ecological contexts are not addressed. Find out about our social science expertise and services

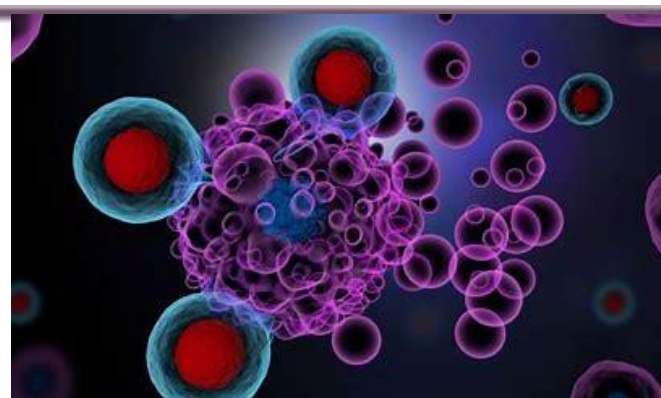
DETECTION & CHARACTERIZATION OF IMMUNE TISSUES & CELLS

PROVIDED TO YOU BY: EATRIS, VETBIONET, INFRAFRONTIER & ERINHA

Contact

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davidmorrow@eatris.eu

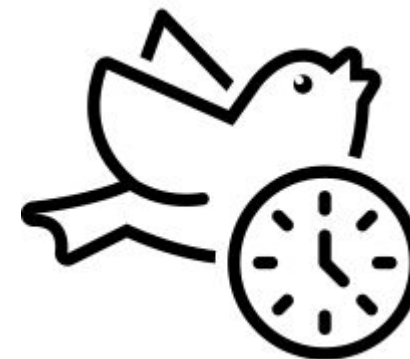


- **Systems level characterization of immune cells in tissues including T cell culture**
Antigen-specific proliferation and cytokine, chemokine and immune factor analysis (mass cytometry, FACSCanto, LSR IV, Symphony, Helios)
- **Identification and isolation of tissue immunological subsets**
For deep profiling of immune cell subsets and on the analysis of WGS/WES data of patients including high-throughput multiplex immunoassays, TCR and BCR profiling and Bio-Plex multiplex cytokine (serum, plasma) analysis
- **Access to tissue explant models**
Including human airway models for testing drugs and for virus – cells interaction, to evaluate the role of individual immune subsets in different context against infectious disease and to characterize viral isolates
- **Detection and quantification of SARS-CoV-2-specific T cells at the single cell level**
- **T-cell cloning and expansion**
Determination of specificity
- **Detection and quantification of SARS-CoV-2-specific B cells at the single cell level**
- **Access to organoids, spheroids & multifluidic devices for immune surveillance (Incucyte live-cell imaging of spheroids)**
- **Multi-site Mass Cytometric Immuno-analysis**
Access to Multi-site Immuno-analysis of SARS-CoV-2, including analysis of infected samples based on metal tag detection by mass cytometry

What type of Regulatory Advice Does ISIDORe Provide?



- Open discussion with a regulatory expert to discuss the right pre-clinical models to assess safety of their product- Can be as short as only 2-10hrs
- Feedback and support on the drafting of a TPP or IMPD
- Support to apply for a scientific advice. What are the right questions?



*The **EATRIS regulatory service and support centre** is available to help guide researchers through this complex path, especially for complex and hybrid products for which clear regulatory guidance may not be available.*

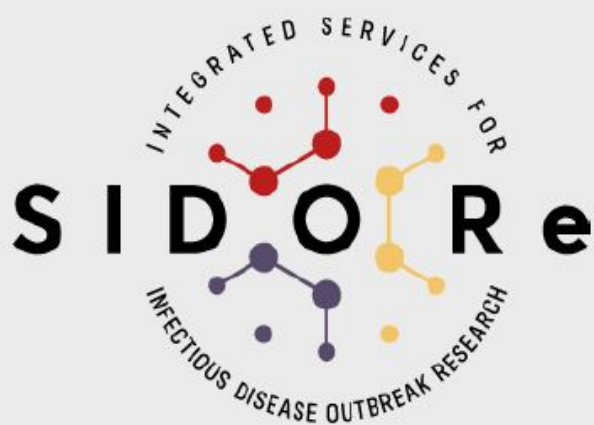


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What type of Clinical Trials support ISIDORE provides at later stages?



- Guidance in planning and design of your clinical research proposals
- Expert advice in trial methodology and selection of optimal trial design
- Planning of clinical trial operations, encompassing regulatory / ethical requirements, informed consent
- Robust data monitoring plans, management and data sharing plans
- Expert guidance in key components of funding applications such as grant proposals and trial budgets
- Assistance in identifying possible funding mechanisms to continue your research
- Efficient task distribution for management of multinational studies



OPEN CALLS FOR PROPOSALS PANDEMIC PREPAREDNESS PROGRAMME

GET FREE ACCESS TO MORE THAN 300 SERVICES



RISK GROUP 4 PATHOGENS

Open as long as funding remains available



RESPIRATORY PATHOGENS

Open as long as funding remains available



VECTOR BORNE PATHOGENS AND THEIR VECTORS

Open as long as funding remains available



OTHER PATHOGENS WITH EPIDEMIC POTENTIAL/DISEASE X

Open as long as funding remains available

OUR SERVICES:

- **ANALYTICAL SERVICES**
- **CELL MODELS**
- **IN VITRO MODELS**
- **IMMUNO-MONITORING & PROFILING**
- **CLINICAL SAMPLES**
- **SUPPORT FOR DIAGNOSTIC & THERAPEUTIC DEVELOPMENT**
- **SUPPORT FOR VACCINE DEVELOPMENT**
- **CLINICAL TRIALS**
- **EPIDEMIOLOGY & SOCIAL SCIENCES**

<https://isidore-project.eu/calls/>



@isidore_eu




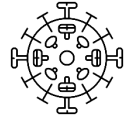

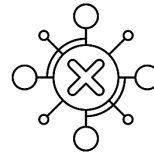
ISIDORE



Funded by
the European Union

ISIDORE Preparedness Programme

Priority Preparedness Pathogens

RG4 PATHOGENS 	RESPIRATORY PATHOGENS (excl. SARS-CoV-2) 	VECTOR-BORNE PATHOGENS & THEIR VECTORS 	OTHER PATHOGENS WITH EPIDEMIC OR PANDEMIC POTENTIAL 
Ebola virus	Zoonotic	Rift valley fever virus	Pathogen X
Marburg virus	betacoronaviruses	Zika virus	Orthopoxviruses
Nipah virus	Influenza A	Chikungunya virus	Non polio enteroviruses
Hendra virus	Y. pestis	West Nile virus	Polio enteroviruses
Lassa virus	M. tuberculosis / bovis	Dengue virus	
New World arenaviruses	C. burnetii	Japanese encephalitis virus	
CCHF virus		Yellow fever virus	
		Tick-borne encephalitis virus	
		Plasmodium	
		B. burgdorferi	
		Leishmania	

ACCESSING OUR SERVICES

FROM STRUCTURAL BIOLOGY TO CLINICAL TRIALS: ALL THE RESOURCES & SERVICES YOU NEED TO ACCELERATE YOUR RESEARCH ON EPIDEMIC-PRONE DISEASES

Three steps to get free-of-charge access to our services:

- Browse our catalogue and identify the service that you need
- Fill out the pre-application form at the bottom of the page and hit the 'SUBMIT' button
- After receiving an email with your ISIDORE ID number, follow the instructions to complete your application

Before you navigate our catalogue, please remember that:

- I. You will need an ORCID number. If you don't already have one, please go to orcid.org to obtain your own in a few clicks.*
- II. For multi-services requests, we'll be happy to help:
contact@isidore-project.eu*

Apply today before the project ends in Jan 2025!

With thanks to our members

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*The contribution in Norway is shared between the University of Oslo (UiO) and the University of Bergen (UiB)

Stay in contact



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