

The logo for ERINHA, featuring the word "erinha" in a lowercase, sans-serif font. A small orange horizontal bar is positioned below the letter "i".

European Research Infrastructure  
on Highly Pathogenic Agents

# ERINHA's Research Approach: From Discovery to Prevention

High Consequence Infectious Diseases  
in Central Eastern Europe:  
Gaps & Cooperation Opportunities  
*online workshop, 25th November 2021*

The text "ERINHA.EU" in a bold, white, sans-serif font, centered within an orange rectangular background.

Claudia Filippone, ERINHA



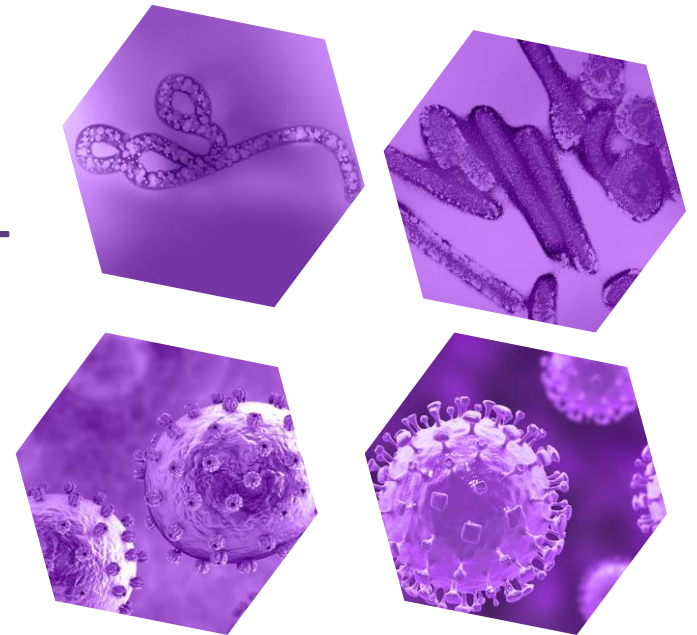
This project has received funding from the European Union's Horizon 2020  
research and innovation programme under grant agreement No. 824061

# ERINHA's Research Portfolio

## Matching with Public Health issues in CEE

### ➤ Pathogens prioritized by ERINHA (according to WHO R&D Blueprint)

- *Filoviridae*: Ebola & Marburg viruses
  - *Arenaviridae*: Lassa virus
  - ***Nairoviridae*: Crimean-Congo Hemorrhagic Fever Virus ++**
  - *Paramyxoviridae*: Nipah & Hendra viruses
- 
- SARS-CoV-2 ++
  - Bacteria
  - Unknown pathogens ++



# ▶ ERINHA's scientific missions and actions

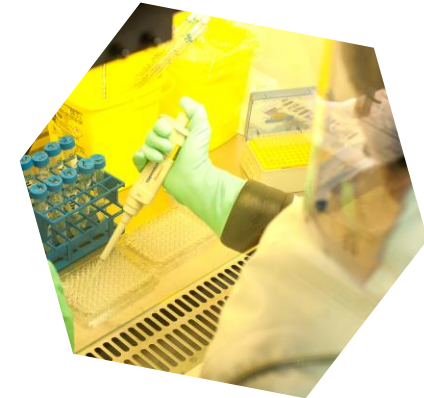
## Supporting research on highly pathogenic agents

- To **increase** the **comprehension** of infection and pathogenesis
  - Pathophysiology of viral infection
  - Immune response
  - Development of preclinical assays (*in vitro*, *in vivo*)
- To **develop** medical **countermeasures**
  - Diagnostic tools
  - Vaccines
  - Drugs & Therapeutics
- To **promote** scientists' skills

# ERINHA scientific missions and actions



Research



High  
containment  
laboratory

Training



Expertise

Capacity  
Building

# ▶ ERINHA scientific missions and actions

## Experimental activities in high containment laboratory

### ➤ *in vitro*

- Classic and state-of-the-art models (primary cells, 3D..)
- High-throughput screening assays
- Virological assays

### ➤ *in vivo*

- Animal disease models (from rodents to NHPs...)
- Development of new disease model
- Preclinical testing

Research

# ▶ ERINHA scientific missions and actions

## Supporting activities in high containment laboratory

- Training for safely working in high containment laboratory
- General **Biosecurity** Training
- Operations of a **Biosafety** Laboratory
- ▶ according to international standard

Training

- Development of research programs
- Risk assessment; best practices; emergency procedures
- Building and operating (in) a high containment facility
- Designing and implementing a biosafety program

Expertise

Capacity  
Building

# ▶ How does ERINHA reach its goals?

## Fostering excellence in scientific research

- ▶ through high containment laboratories (BSL-3, BSL-4)..  
.. and scientists

### Service Provision

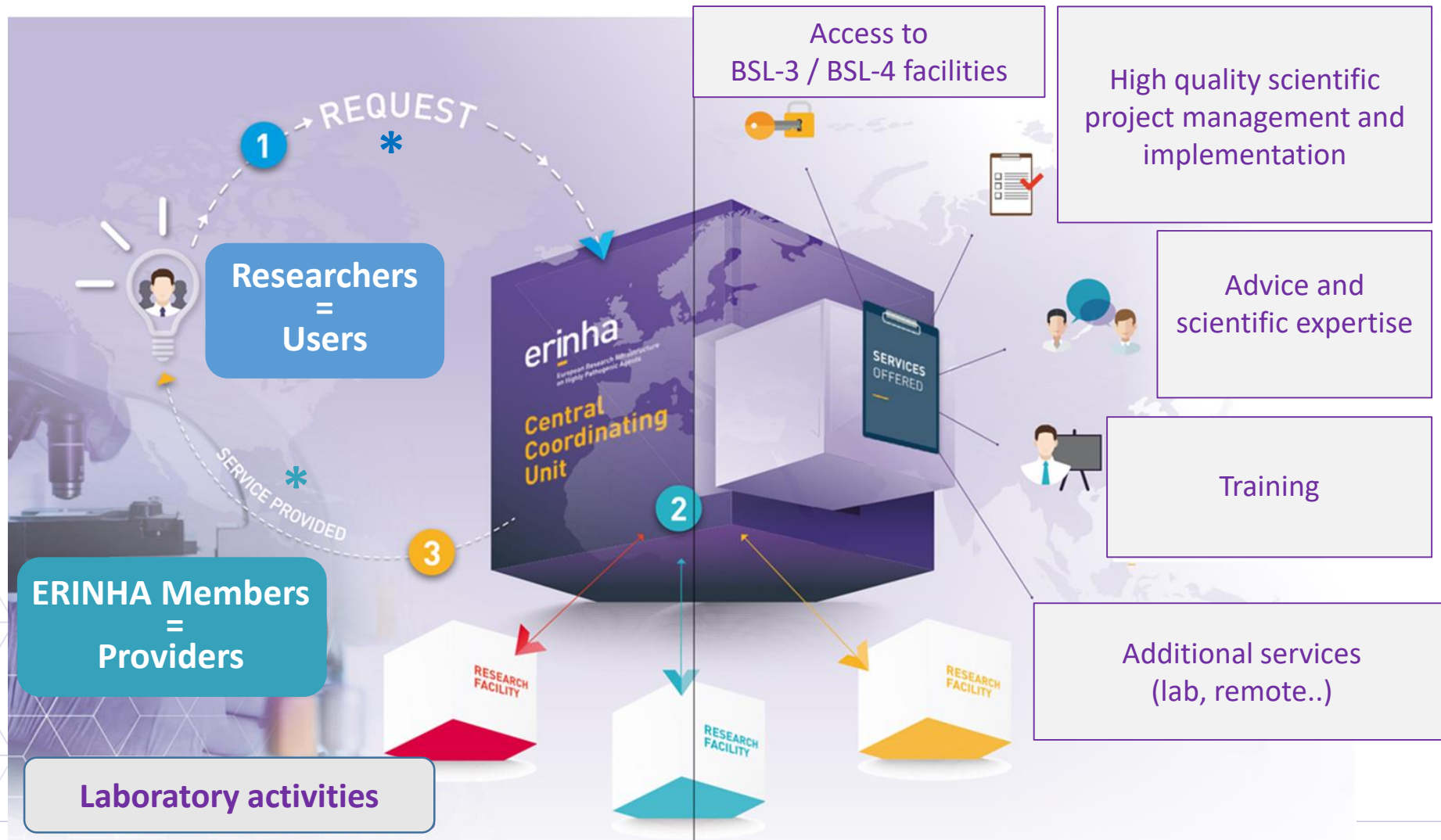
- *free of charge* TransNational Access \*  
(for the benefit of researchers)
- Paying services

### Contribution /Coordination scientific programmes and consortiums

(\*see presentation A Richard)

# Access to ERINHA' services

## At the side of researchers





# ► Facilitating Research & Development

## Provision of services and expertise

- **Nipah Vaccine** Project - University of Tokyo through CEPI initiative

Proof-Of-Concept *in vivo* efficacy study

ERINHA Member: NNK, Hungary

*ongoing*

Actors: Academy & Coalition for Epidemic Preparedness Innovations  
Vaccine Development -> critical impact on public health

- **Trailhead Biosystems** Project - USA company

High-throughput screening of **anti-SARS-CoV-2** drugs

Proof-Of-Concept *in vivo* efficacy study

ERINHA Member: KUL, Belgium

*completed*

Actors: Private sector  
Drug development

- **European Space Agency** (ESA) Call for Experts

Scientific advice/ estimate - Mars sample receiving facility

ERINHA: Coordinator

*completed*

Actors: EU intergovernmental organization  
Expertise for ambitious initiatives

# ► Making science happen: TNA research projects

## *free of charge* TransNational Access: What, Who, How

- Through EU funding, **ERINHA** can periodically support User projects by providing access to its **catalogue of services for free**
- Open to **scientists** who **need** access to high containment facilities to advance their research project
- **Selection** based on technical feasibility and **quality** of the **proposed research project (independent peer-review)**
- Both EU and non EU Users are eligible

## ▶ Making science happen: TNA research projects

**Service Provision: *free of charge* TransNational Access  
focus on BSL-4 viruses**

- **ICONIM** - B. Horvat, M. Iampietro, International Center for Infectiology Research INSERM  
**Immune COntrol of Nipah virus Infection in Mice** (*ongoing*)  
ERINHA Member: NNK, Hungary
- **MuPaV** - T. Lambe, The Jenner Institute, University of Oxford  
**(Assessment of) Multi-Pathogen Vaccine** targeting filoviruses and arenaviruses (*ongoing*)  
ERINHA Member: FoHM, Sweden

## ► Making science happen: TNA research projects

### Service Provision: *free of charge* TransNational Access focus on SARS-CoV-2

- **Project X** - Swedish SME  
Small molecules as anti-SARS-CoV-2 treatments (*ongoing*)  
ERINHA Member: MUG, Austria
- **NESARDia** - German company  
Development of **NE**xt generation **SARS-CoV-2 Diagnostics** (*manuscript in preparation*) (*ongoing*)  
ERINHA Member: MUG, Austria
- **SARS-CoV-2 SYBODIEs** - D Li, D Lavillette, Chinese Academy of Sciences & Institut Pasteur Shanghai  
SARS-CoV-2 neutralization by SYnthetic nanoBODIEs (*Nature Comm, 2021; EMBO Mol Med, 2021*)  
ERINHA Member: EMC, Netherlands  
(*completed*)

# ▶ Making science happen: TNA research projects

## New forthcoming TNA Calls

- **ERINHA-Advance project**

- ▶ upcoming (this week!)

Special call on SARS-CoV-2 / COVID-19

Follow at: [www.erinha.eu](http://www.erinha.eu)



**TNA Call**

- **ISIDORe**

- ▶ beginning 2022 (*see presentation A Richard*)

SARS-CoV-2 / COVID-19 ; emerging and epidemic-prone infectious diseases

## ▶ ERINHA outputs and impact on scientific community

### Strong contribution to develop medical countermeasures for emerging and epidemic-prone diseases

#### 1. Tracking emerging high-risk pathogens

Providing **diagnostic** tools and capabilities

#### 2. Increasing knowledge on infection and mechanism of associated diseases

Identifying viral targets for both **vaccine** and **therapeutic** scope

#### 3. Developing new interventions

Enlarge modelling capability (preclinical studies)

#### 4. Translating intervention to the market

Testing existing therapeutics against emerging agents

# ▶ ERINHA and the CEE region?

## Cooperation opportunities

- ▶ Collaborative Projects on emerging zoonotic viruses, epidemic preparedness...
- ▶ TransNational Access (TNA) to high containment facilities and expertise
- ▶ Exchange of experience and best practice sharing
- ▶ Capacity building and training opportunities (according to needs)
- ▶ Common standards complying with international standards development



# erinha

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