

CiMUS

Center for Research
in Molecular Medicine and
Chronic Diseases



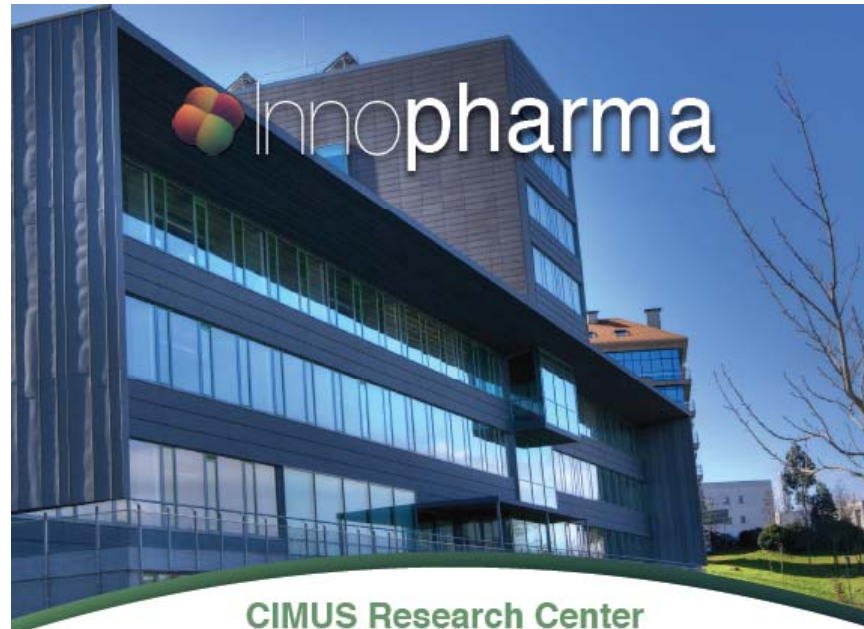
biospain
2018

***Research networks as efficient transfer mechanisms.
Current capability and growth expectations***

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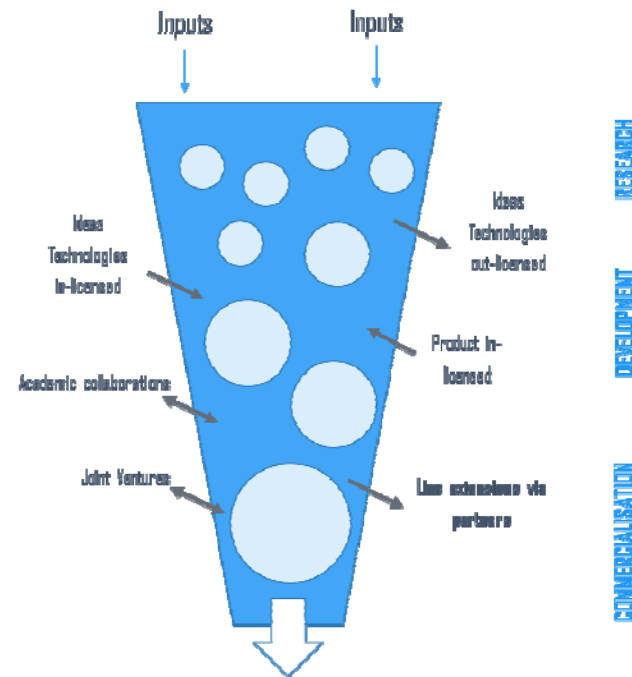
Thank you!

Index.....a historical view of 2010-2018...good know-how not money.....become more global?...need for PPP?

- 1. Research Infrastructures: The way for Excellence and Innovation?**
2. ERIC/ESFRI: EU-OPENSREEN
RIs and Innovation hubs
3. Overall challenges: Prioritization and Sustainability

1. Research Infrastructures: excellence and innovation

Nowadays, the highest innovation in biomedical research applied to drug discovery is being developed **worldwide** through different **open innovation models** and **public-private partnership (PPP)**, sharing capabilities, risks, funding, and intellectual property in a globalized environment through different co-development models, implying **innovation HUBs**.

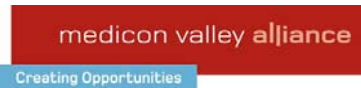


1. Research Infrastructures: excellence and innovation

GLOBAL CASE STUDIES INNOVATION HUBS



MaRS Innovation



Country: UK
Year: 2016
Total fund: 40 M £



Joint venture/consortium of world-leading UK universities and global pharmaceutical companies to drive therapeutic innovation, improving the speed and potential of university research being translated into novel medicines. It provides **committed translational funding and drug discovery expertise for novel therapeutics** accelerating them towards the clinic.



3,3 M £ each one

and



10 M £ each one

1. RIs as innovation HUBs



1. RIs as innovation HUBs

MODEL FOR:

- Cooperation: generate complementarities and avoid duplications.
- Standardize processes.
- Pool resources and synergize efforts.
- Drive co-development models in Open Innovation for advancing biomedical science in the value chain.
- Consolidate global leadership through connection between HUBs of excellence and innovation.

framework of robust and reliable methods, based on agreed indicators, for assessing socio-economic impact of Research Infrastructures⁷¹.

There was a general agreement on the fact that **the Commission should continue collaborating with the OECD and other relevant international players on the development of a common approach to RI socio-economic impact assessment.**

- Stimulate the further integration of Research Infrastructures in the socio-economic local context.

Physical Research Infrastructures (especially the large analytical facilities) are an integral part of the geographical region in which they are located. Since Regions are important arenas for innovation and are key actors in developing effective regional innovation ecosystem, they can play a role to ensure impact and integration of RI into regional innovation ecosystems.

As stated by European Regions Research and Innovation Network (ERRIN), *Regions are also close to what is happening on the ground and used to collaborating with many different stakeholders (...), they can act as bridges between research and growth policy and inspire cross-silo initiatives.*

EIROforum, highlighted how, by attracting hi-tech companies and specialized facilities, educational establishments, and offering new employment possibilities, RI create an 'innovation hub in their regions which, being in many countries responsible for universities, can then play an important role in the upskilling of RI staff and user communities.

The discussions therefore indicated a **requirement for the Research Infrastructures to consolidate their position and to establish appropriate links with all the relevant entities at regional level.**

- Increase the visibility of Research Infrastructures to society at large

One of the main impacts that RI have is the visibility they provide to science. In this respect RI often have features that appeal to the public and therefore have a complementary role to the universities and other RPO when it comes to public outreach that may stimulate, when appropriately communicated, interest in science and technology of young people and students.

The correlation of RI visibility with the societal impact it is extremely strong although in many cases still understated. **RI need to dedicate sufficient resources to communicate better and better explain their added value.** The engagement with the public at large remains vital to ensure a proper

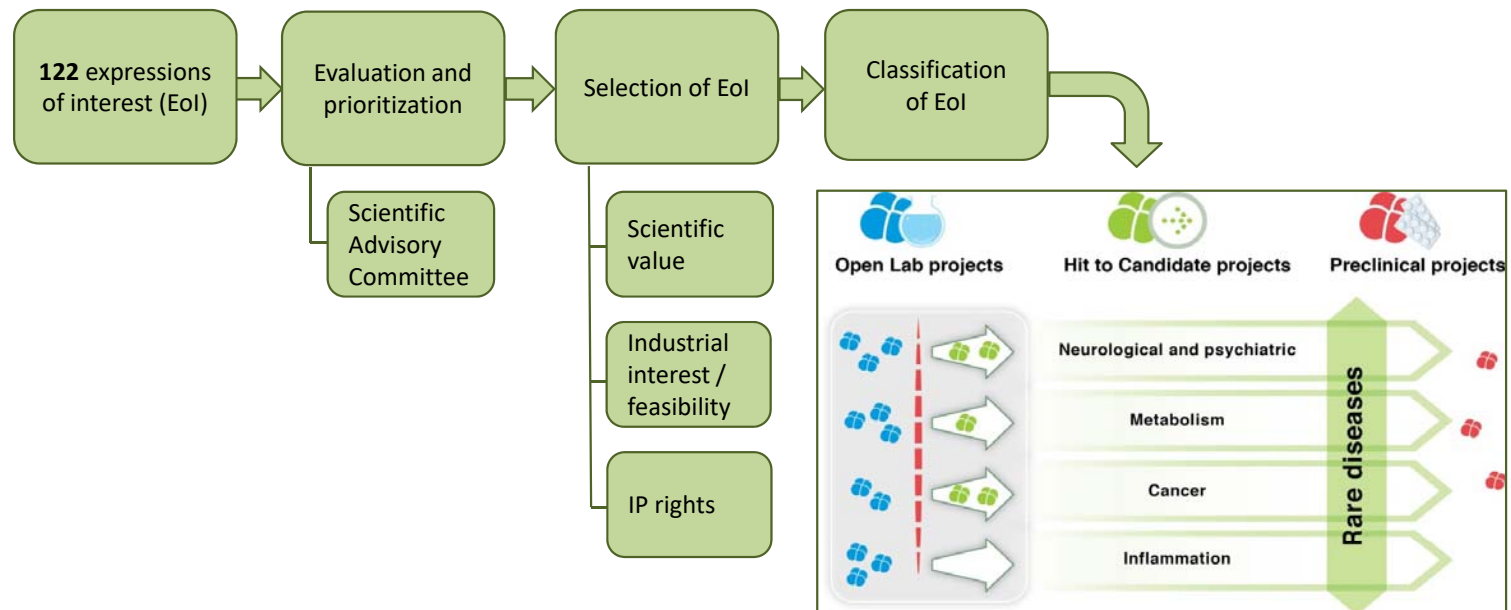
⁷¹ Idem Ibidem

Industry Engagement

3. Innopharma

INNOPHARMA launched an open call for high-risk high-reward research projects in five therapeutic areas: Neurological and psychiatric diseases; Metabolism; Cancer; Inflammation; Rare diseases.

122 expressions of interest (from all over the world) were received and those with the highest potential were prioritized for further development. Selected projects were classified in three categories according to their stage of development in the process of early drug discovery.



I2D2 initiative: Overview



The **I2D2 initiative** is focused on adding value to transformational biomedical research to be applied to drug discovery, thus leaping over the gap between basic research in new therapeutic mechanisms and the industrial application of the research findings.

153 Projects applied. Three of them selected for development.





3. Innopharma sustainability: Kærtor Foundation

Private non-profit foundation, registered in the Register of Foundations of Galician Interest of the Xunta de Galicia, under the protectorate of the Galician Ministry of Economy, Employment and Industry.

The Foundation arises from the conclusions reached after two years of intensive work with a committee of international experts in open innovation, drug discovery and financial models.

Unprecedented model in the context of open innovation and public-private co-development in drug discovery, set up to manage the know-how and to facilitate the reciprocal transfer of knowledge in drug discovery programs.

The trustees of the Foundation combine the experience, knowledge and prestige in the field of drug discovery, pharmacogenomics and market-oriented business.



José Arnau
In his own name



Ángel Carracedo
Scientific Director of
Kærtor Foundation



Mabel Loza
Scientific Director of
Kærtor Foundation



Antonio López
Rector of the USC

3. Sustainability: Where are we going. Industry Engagement

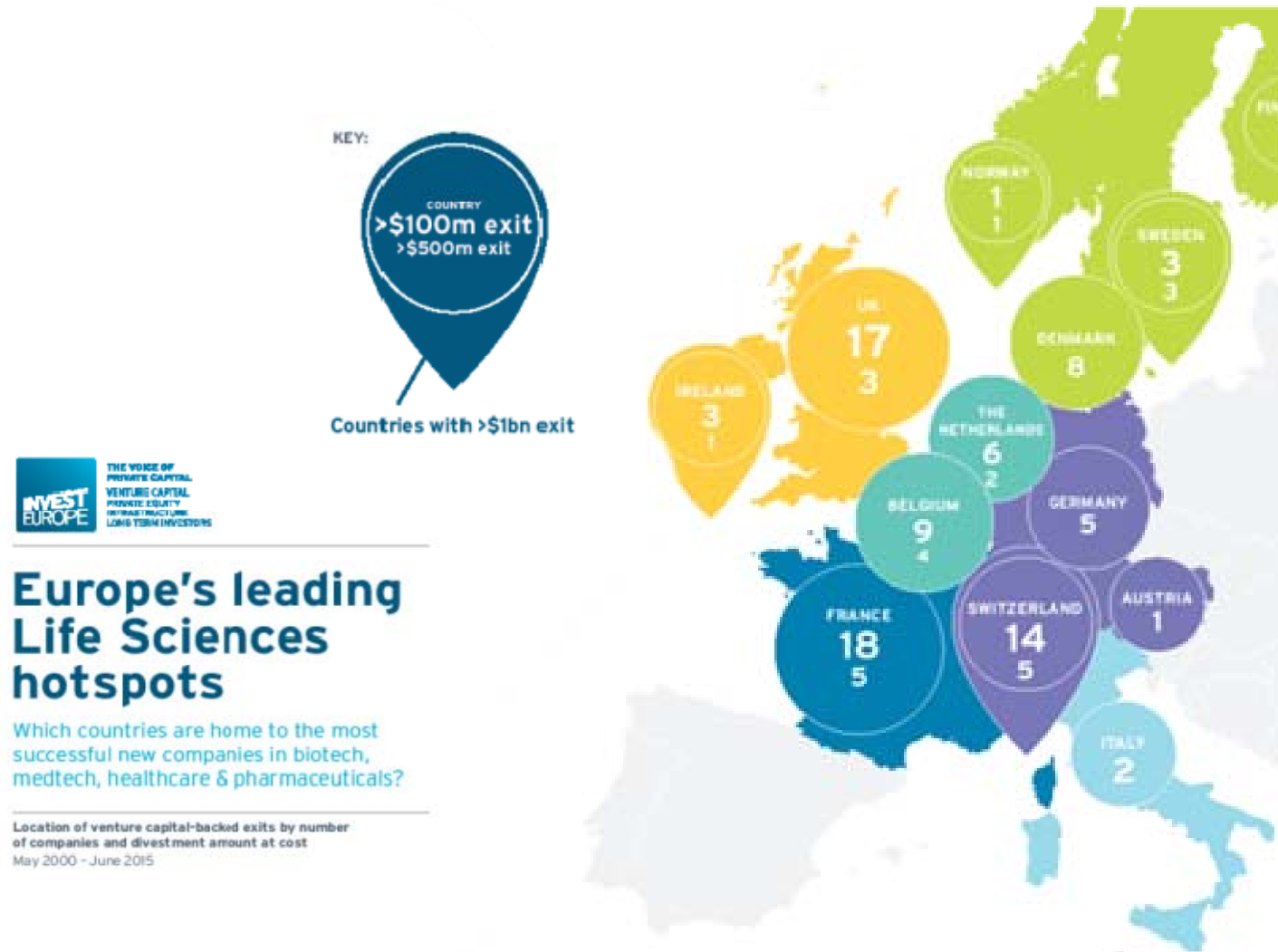
Innopharma/Kærtor

- Johnson & Johnson.
- SunRock Biopharma.
- Oncostellae.
- PaloBiofarma.
- Landsteiner Genmed.

3. Sustainability: Present situation in Spain

1. **Highly competitive and complementary infrastructures** for applying biomedical science to disease mechanisms (i.e. Spain has four **nodes** of the European network EU-Openscreen).
2. The **top-level biomedical research** in the Spanish centers is a non-exploited goldmine in its application to pharmaceutical research.
3. **Anchor pharmaceutical companies** (based on Spain and with global branches) and **biotech companies**, willing to project co-development in Spain.
4. A high level in **clinical research**. Ten years ago Spain was at the very bottom in Europe and nowadays it is in the top by employing public (the clinical trials network from Instituto de Salud Carlos III and the own centers) and private tools (from the Best project).
5. Good **professionals at the public institutions** that have a deep knowledge of the sector and have the capability of creating the novel open innovation public/private tools in drug discovery adapted to spanish reality.
6. The **capabilities**, an excellent **know-how** and **individual success experiences** in the public and private sector of pharmaceutical research. The Spanish centers are used to take the maximum profit of the available resourced due to financial restrictions.
7. BUT Spain doesn't have **specific funding** for open innovation models of co-development

European *Hubs* in health, pharma and biotech





REDES DE EXCELENCIA

Spanish Network of Drug Discovery (Red Española de Descubrimiento de Fármacos)



Coordinator: Mabel Loza
University of Santiago de Compostela



3. REDEFAR: Nodes and network groups

Node 1:

In vitro
screening

USC:
Mabel Loza

CIPF:
María Jesús
Vicent

F.MEDINA:
Olga
Genilloud

Node 2:

Bio-Chemo-
Informatics

IMIM:
Ferran Sanz

UPF:
Jordi
Quintana

UAB:
Leonardo
Pardo

Node 3:

Medicinal
chemistry

UCM:
María Luz
López

CSIC:
Ana
Martínez

Node 4:

In vivo
models

USC:
Carlos
Diéguez

F.IMABIS:
Juan Suárez

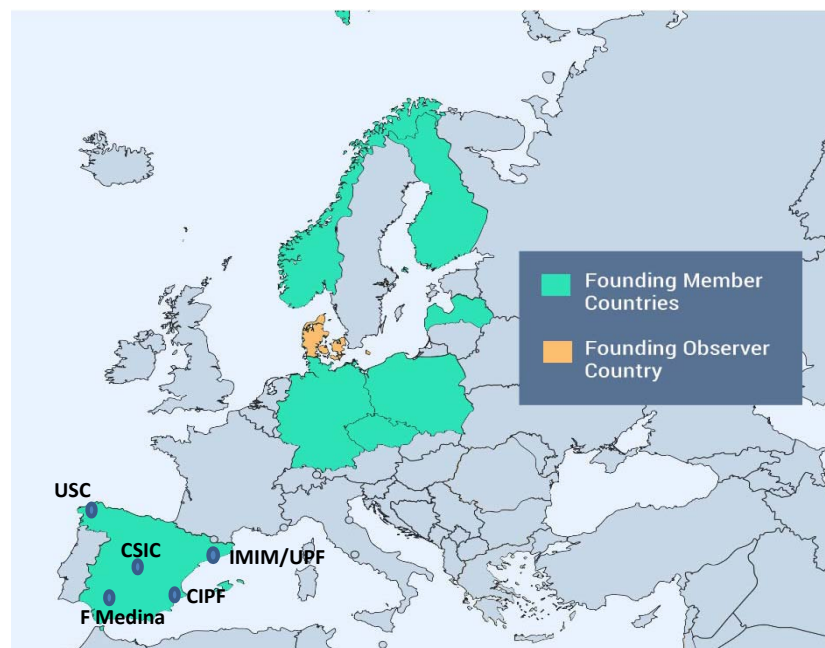
Index

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2. ERIC/ESFRI: EU-OPENSREEN

Status

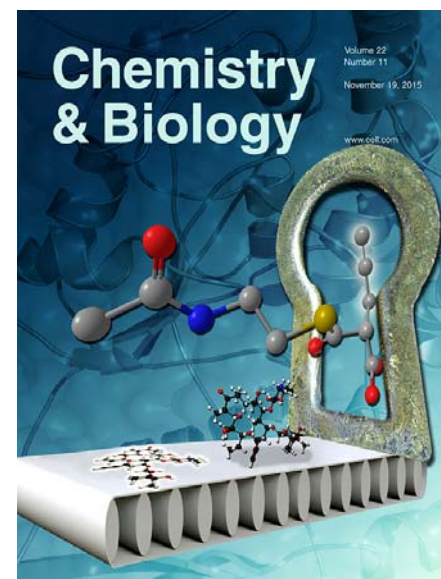
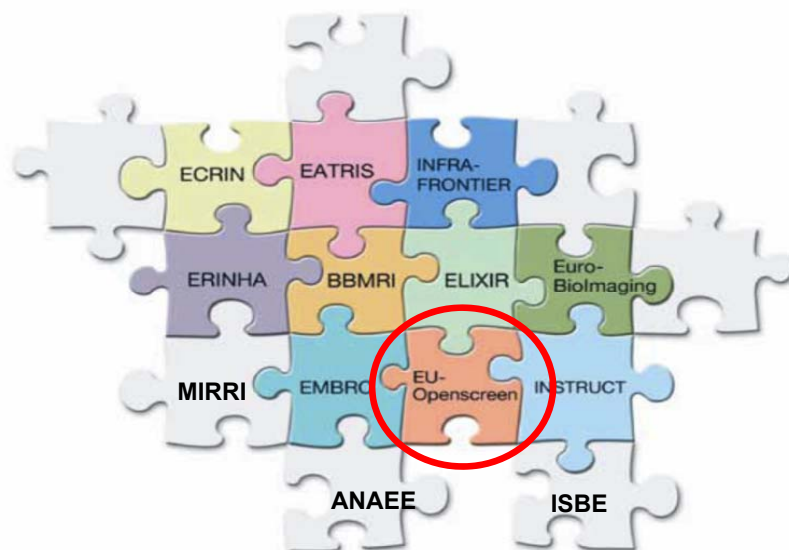
- Founded 20th March 2018
 - 1st AoM in April
- 21 approved partner sites (screening & chemistry)
- Substantial investment in
 - Laboratory facilities on Campus Berlin-Buch
 - Compound management & 100K commercial library
- Two Spanish high-capacity screening platforms, one specialized screening platform, one chemistry platform.



2. ERIC/ESFRI: EU-OPENSOURCE

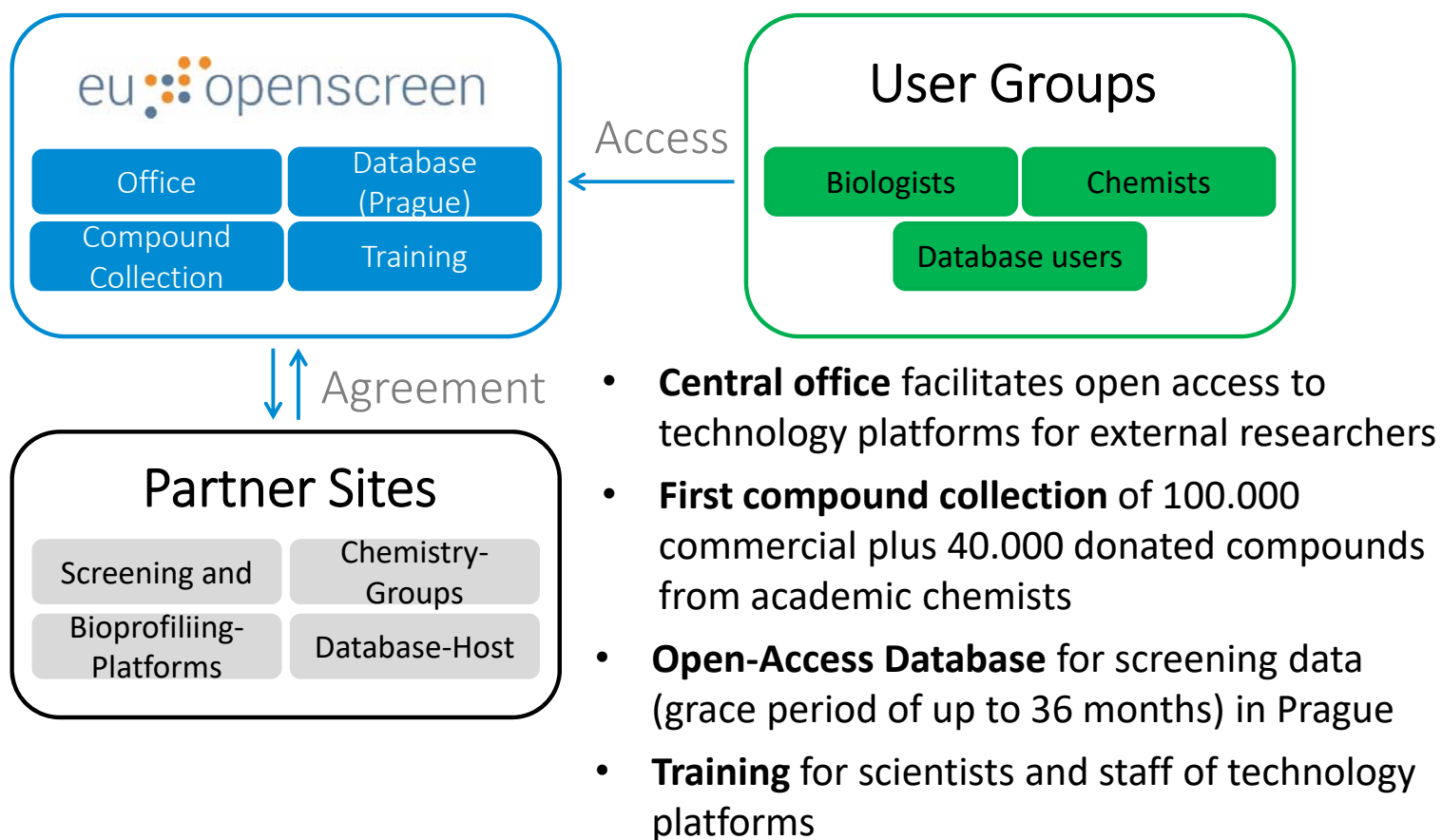
Biomedical ERICs & EU OPENSOURCE

- **ESFRI are facilities**, resources or services of a unique nature to conduct top-level research activities in all fields.
- **ERIC = European Research Infrastructure Consortium**
- Aimed at meeting long-term needs of Europe's research communities across scientific areas.



2. ERIC/ESFRI: EU-OPENSREEN

Concept



3. Sustainability: Where are we going. Industry Engagement

ERIC EU-OPENSSCREEN

- **GSK:** HT phospho-flow cytometry.
- **SEALD:** Precision medicine in cancer using DSS.
- **ESTEVE:** Micro-Electrode Arraye (MEA).
- **PROMEGA:** NanoBRET™ Target Engagement Intracellular Kinase Assays.
- **ASTRA ZENECA:** Cellular Thermal Shift Assay (CETSA).

Innopharma/Kærtor

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Index

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 - REDEFAR: the Spanish Network of Excellence in Drug Discovery
 - Where are we going

3. Sustainability: Where are we going. Internationalization

➤ The new **EU-OPENSOURCE-ERIC** structure has recently get its **first project granted**, **EU-OS-DRIVE: H2020-INFRADEV-2018-2020**. Development and long-term sustainability of new pan-European research infrastructures. The **Spanish participation is very important: USC, CIPF, F.MEDINA (REDEFAR, Node 1), IMIM/UPF (Node 2) and CIB-CSIC (Node 3)** are partners

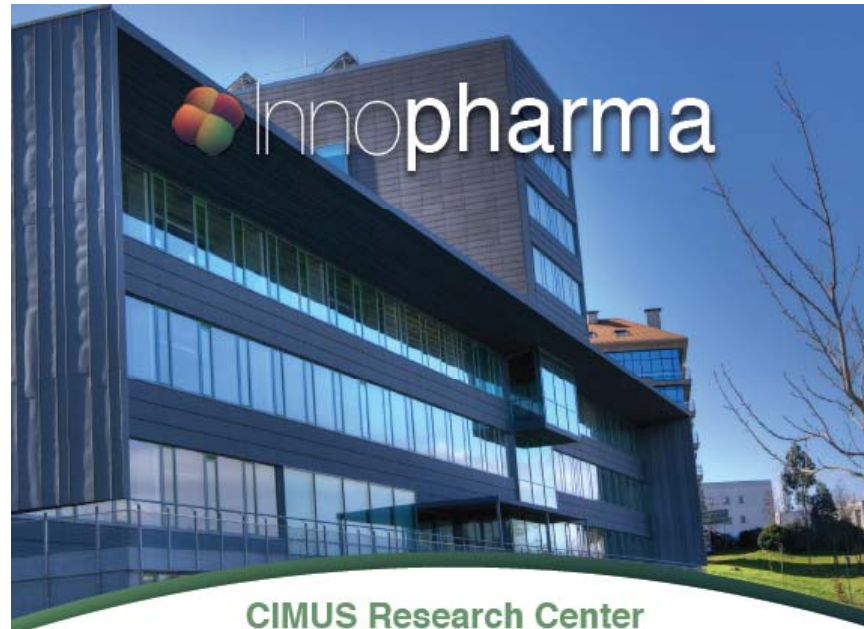


➤ REDEFAR has a *Memorandum of Understanding* with the **European Lead Factory (ELF)**



➤ Connection with other collaborative initiatives outside Europe:
USA - Cancer MoonShot





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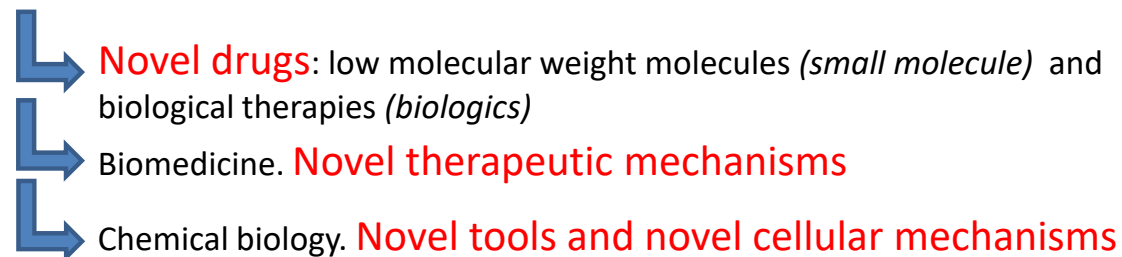
Funded by:



Thank you!

3. Sustainability: Where are we going. Open Innovation co-development

REDEFAR aims to **potentiate and assemble the early drug discovery** in Spain by synergizing the high level of science through drug discovery programs up to human proof-of-concept. It is in the global environment of **open innovation HUBs** and connecting with European programs:



- There is a need of generating programs more advanced in the value chain that would allow us to compete worldwide. **Co-development early programs** and application of the science from research groups with spin-offs and eventually anchor companies.
- **Threaten:** There are no funds in Spain oriented to this sector. Therefore, the application of the best Spanish science is going to the waste pipe (Importance of creating complementary funding lines and structures)

Index

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3. Innopharma impact in the public scene-HUB

-  **25 signed agreements with research centres, principal investigators and technology transfer offices (TTOs).**

