

# TRI.si

## Translational Research Initiative, Slovenia

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Vicedean

## Positioning of UL FFA in a contemporary DDD process

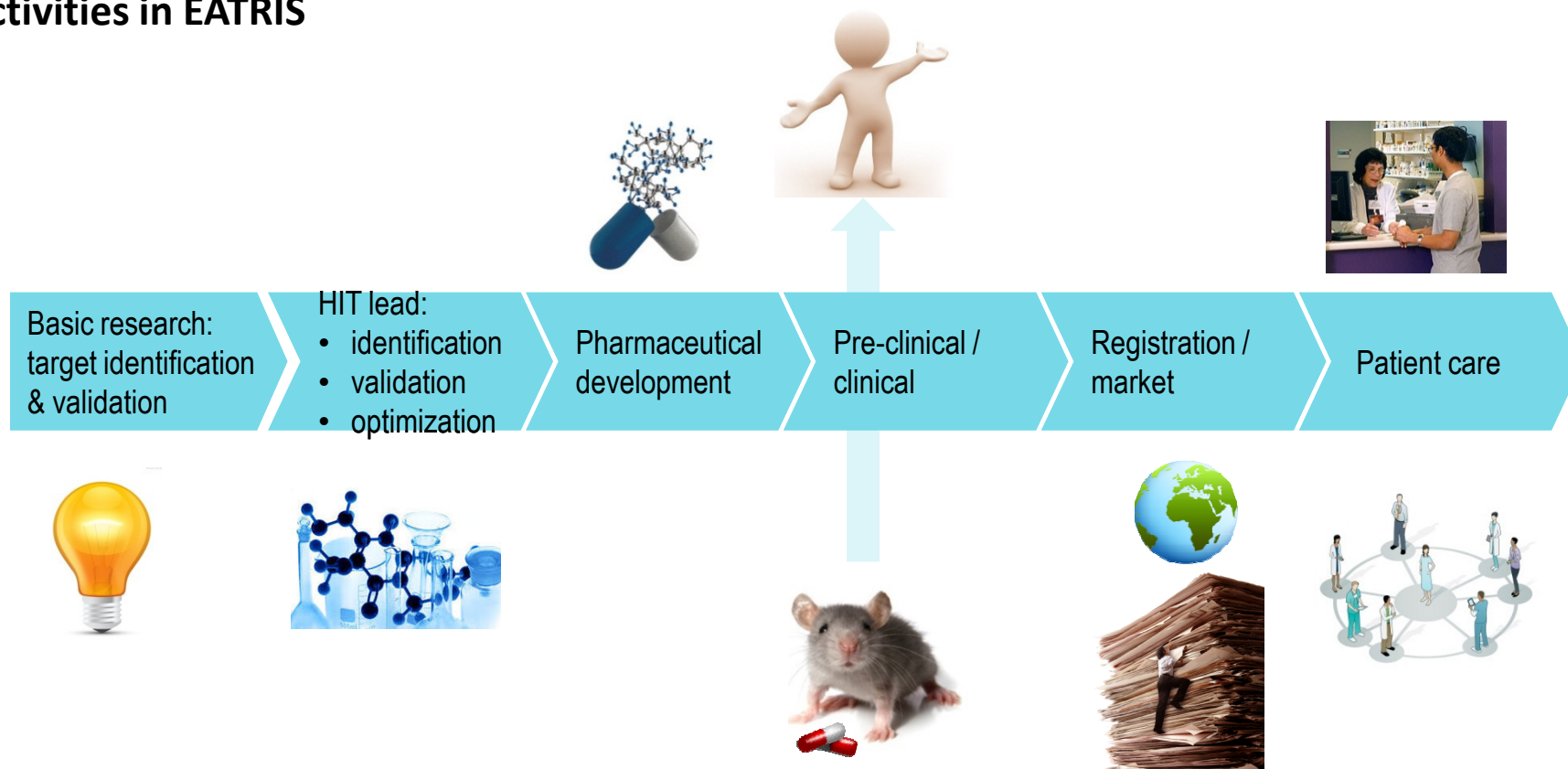
FFA landscape 3D /D<sup>3</sup>

- 3D: Edu, Science, Innovation
- D<sup>3</sup>: Drug discovery and development

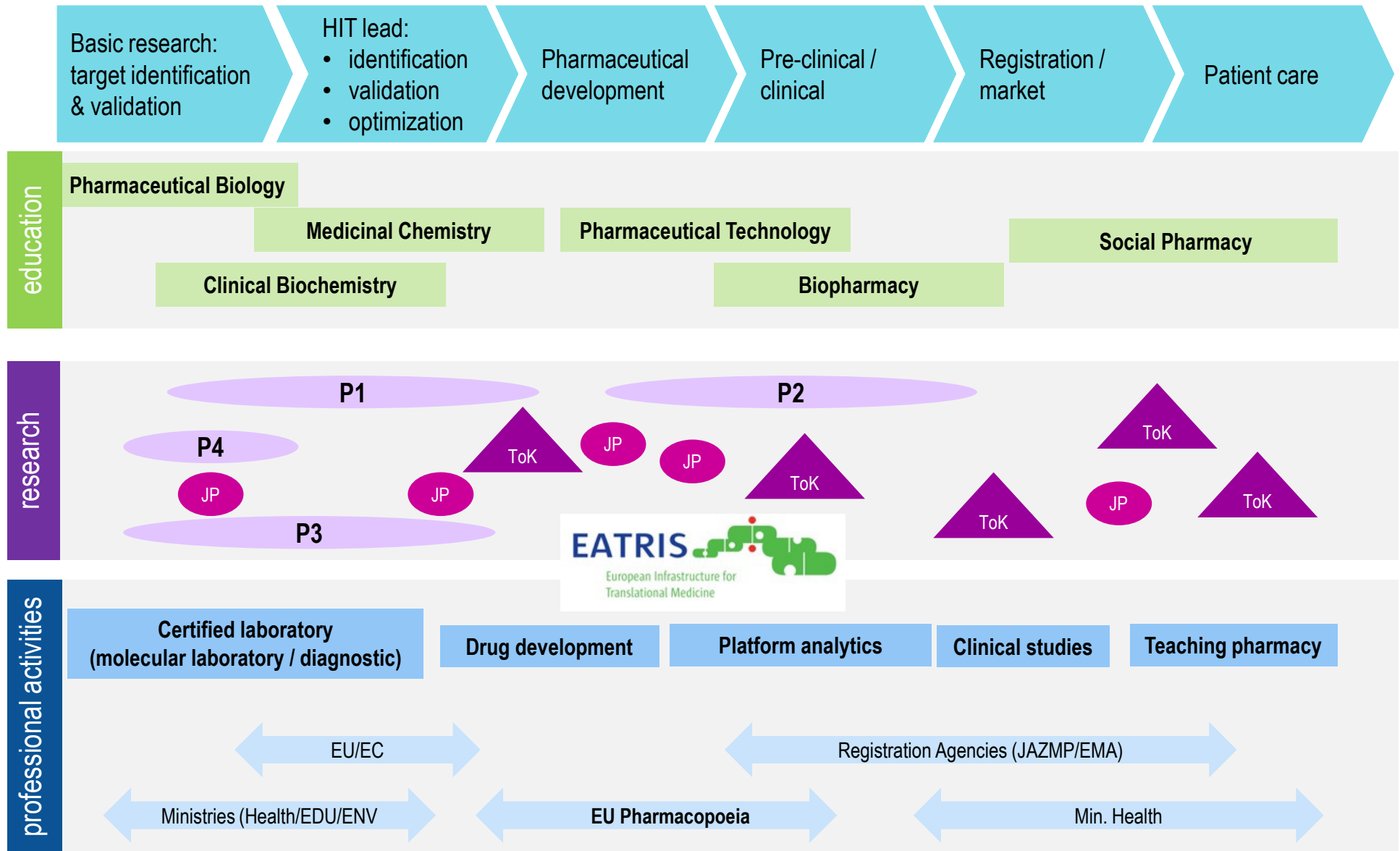
Innovative and applicative research: **accompanied by a grounding in basic science**

**Professional services**

**Activities in EATRIS**



# Faculty of Pharmacy landscape



**Basic research:  
target identification  
& validation**

- HIT lead:
- identification
  - validation
  - optimization

Pharmaceutical development

Pre-clinical / clinical

Registration / market

Patient care

→ **OMIC-approaches**

→ **translational oncology / personalized therapy**

**6-MP**

**imatinib**

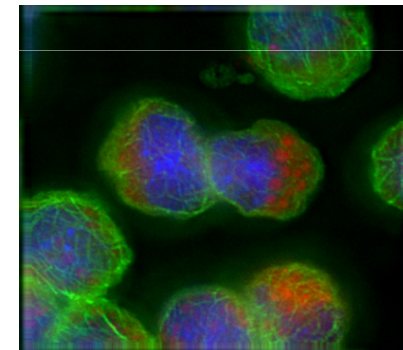
→ **identification of biomarkers**

**cathepsins as biomarkers**

→ ***in vitro* models development**

→ **nanomedicine safety and efficacy**

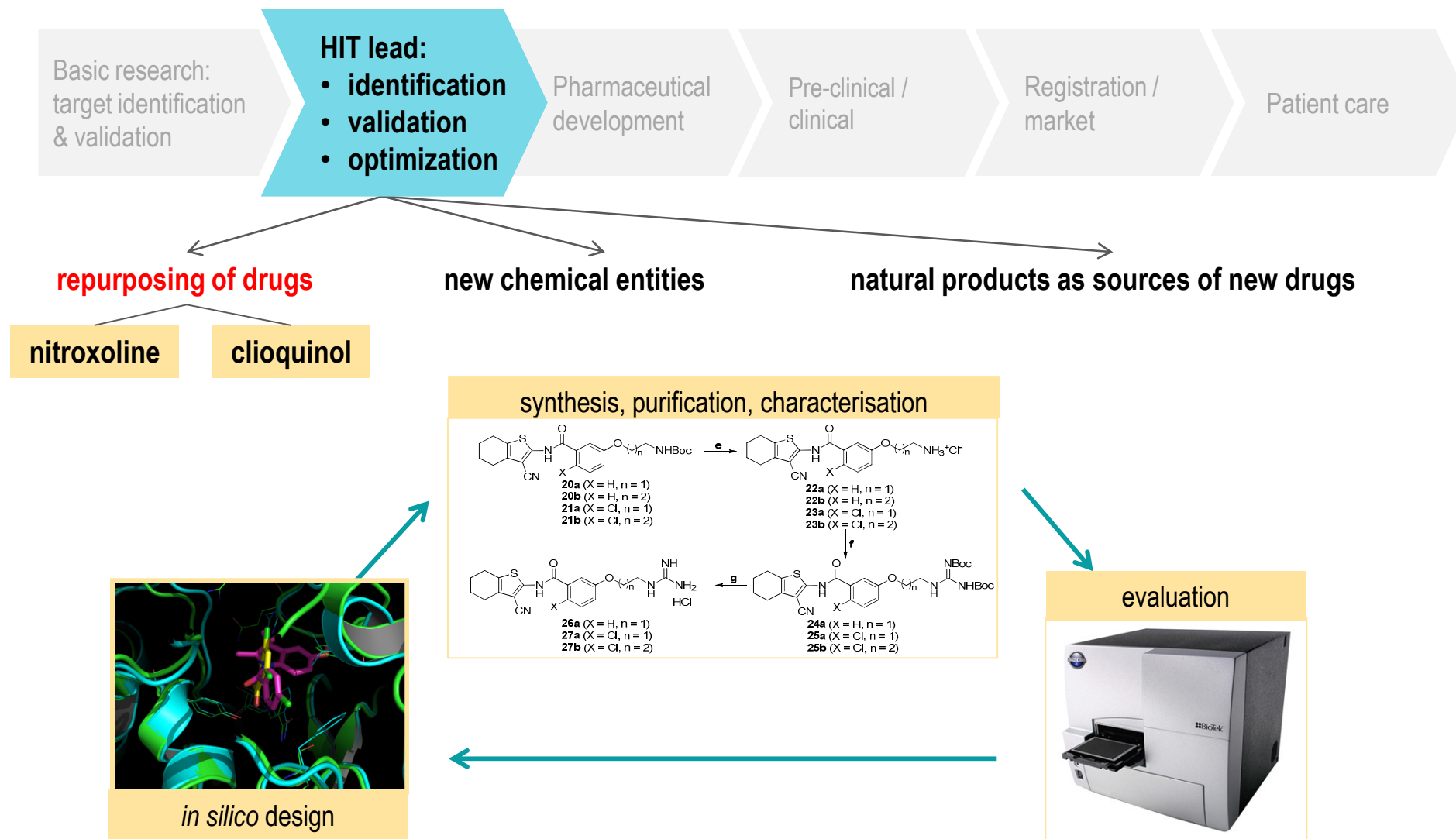
→ **repurposing of drugs**



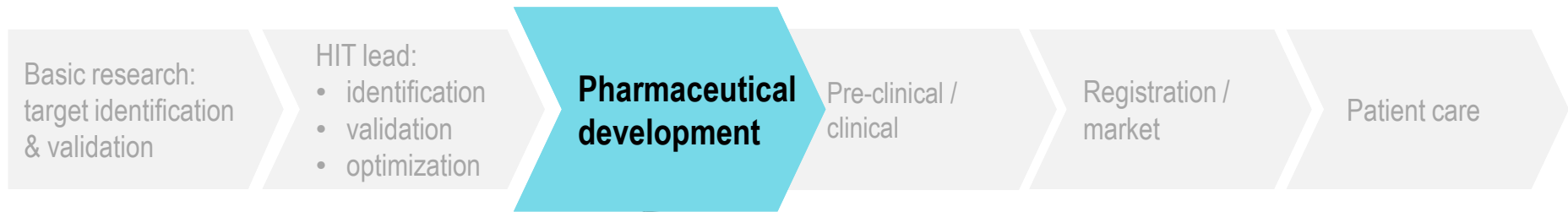
Hafner A,.... Kos J. Neuroprotective role of  $\gamma$ -enolase in microglia in a mouse model of Alzheimer's disease ... Aging. *Cell*, 2013

KRISTL J, ... KOCBEK P. Intracellular trafficking of solid lipid nanoparticles and their distribution between cells through tunneling nanotubes. *Eur. j. pharm. Sci.*

MILEK M, ....., MLINARIČ-RAŠČAN I. Post-translational stabilization of thiopurine S-methyltransferase. *Biochemical pharmacology*, 2012.



SOSIČ, I.... GOBEC S. NITROXOLIN. Development of new cathepsin B inhibitors nitroxoline derivatives. *Journal of medicinal chemistry*, 2013,



development of innovative drugs/delivery systems

development of generic drugs

**SOLID DOSAGE FORMS**

**TABLETS**

- immediate release
- modified release



**PELLETS**

- layered pellets
- matrix pellets
- filmcoated pellets



**GRANULES**

- wett granulation
- hot melt granulation

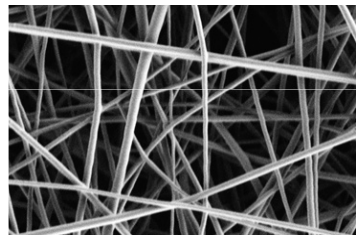


patent no. **EP 2262486 B1**.- Munich: The European Patent Office, **02.01.2013**, 17 str.,  
**EP 2443094 B1**, 2013-03-20, European Patent Office, **2013**, 22 str.,



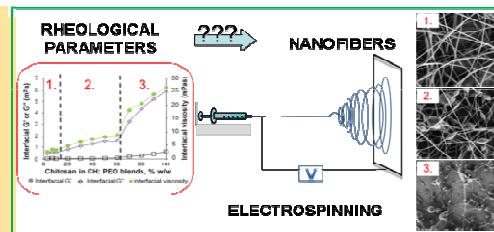
development of innovative drugs/delivery systems

development of generic drugs



**NANOMEDICINES**

- to preserve bioactivity
- to improve bioresponse
- to achieve targeted delivery



nanofibers  
delivery, tissue regeneration

nanosuspensions

nanoparticles  
delivery, targeting

PELIPENKO J,... KRISTL J. The topography of electrospun nanofibers and its impact on the growth and mobility of keratinocytes. *Eur. j. pharm. biopharm.*2013

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& validation

HIT lead:  
• identification  
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Pharmaceutical  
development

**Pre-clinical  
clinical**

Registration /  
market

Patient care

*in vitro* models

Clinical studies

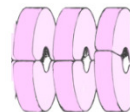
prediction of metabolism

recombinant  
enzymes

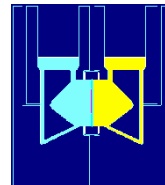
cell lines



tissue slices  
(liver, intestine)



side-by-side  
diffusion chambers



increasing complexity

increasing **prediction power**

- bioequivalence studies
- interaction studies
- cellular drugs for advanced Th

### Immunotherapy of prostate cancer

EudraCT # 2012-005498-29

#### Ongoing clinical study

Partners:

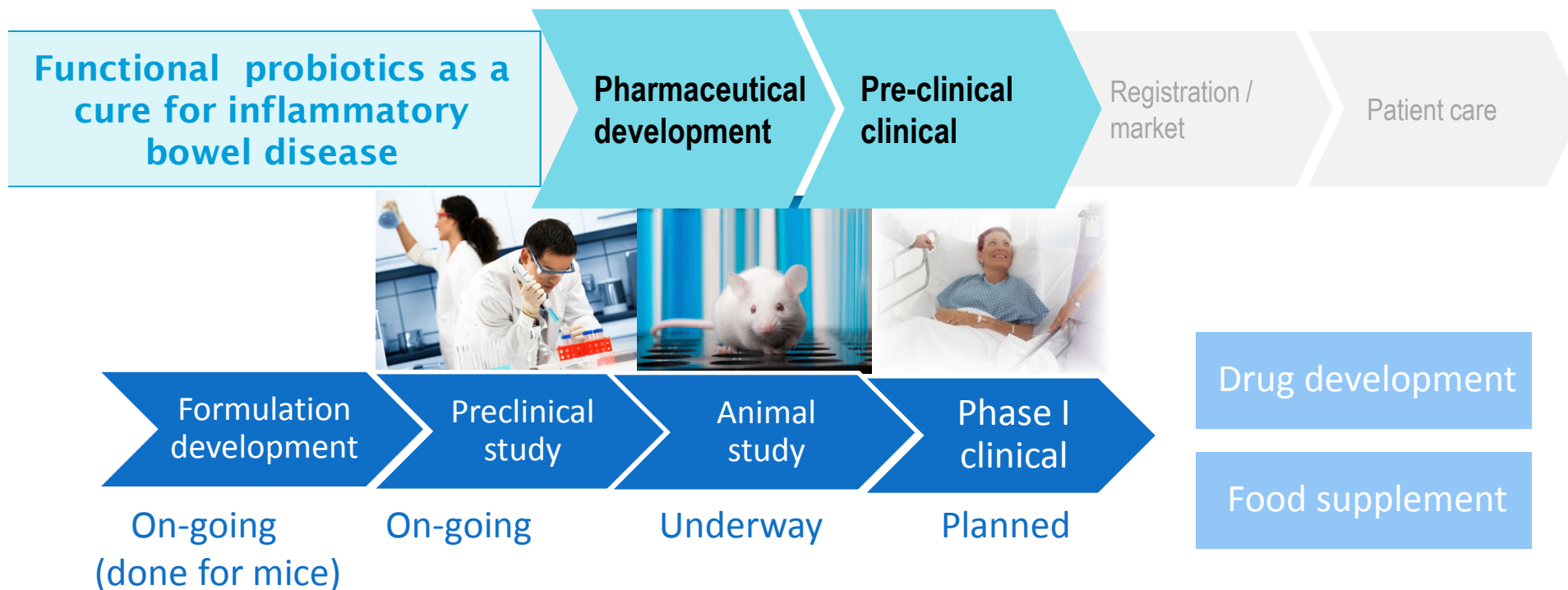
UL FFA, UL MF, UKCL, Celica Biomedical

The cell fusion technology **patented:**

Hybridoma technology # 200300322-21661,

# EP 2 069 782 B1





- UL FFA and IJS: basic research, platform development
- MEDIS (co-establisher of Centre of competence KC BRIN)
- UL MF and UKC: ex vivo study on bioptic tissues from patients
- UL BF: probiotics library

**Patent application:** EPO P003127EP; USP 20120282700

*Engineered lactic acid bacterium Lactococcus lactis capable of binding antibodies and TNF $\alpha$  .  
Appl Environ Microbiol. 2010.*

*Award for sustainable development and **Golden award for innovation 2010** (Chambers of commerce and industry of Slovenia)*



**Health Technology Assessment**



- comparative effectiveness and safety
- pharmacoeconomics

**Registration**



OBRADOVIĆ M, MRHAR A ,KOS M Cost-effectiveness analysis of HPV vaccination alongside cervical cancer screening programme in Slovenia. *European journal of public health*, 2010.



**Research Network in healthcare**

**Post-marketing studies**

**Base:** evidence based medicine and spec. evidence based pharmacy practice.

- pharmacovigilance
- pharmacoepidemiology

**Objective:** optimization and racionalization of pharmacotherapy.



## OUR partners



European Advanced Translational Research infrastructure  
2013 - EATRIS ERIC: Slovenia-UL FFA observers  
2014 - Anticipated full members



PHARMINE, Phar-QA: European Association of Faculties of Pharmacy



PharmaTrain, CEMDC: Cooperative European Medicines Development Course



Innovative Medicines Initiative



PERC: Postgraduate European Radiopharmacy Course in collaboration with ETH Zurich



EUR-INTAFAR: Inhibition of New Targets for Fighting Antibiotic Resistance (2005-2010)



ORCHID: Open Collaborative Model for Tuberculosis Lead Optimisation (2010-2014)



MAREX: Exploring Marine Resources for Bioactive Compounds: From Discovery to Sustainable Production and Industrial Applications (2010-2014)

