WHAT HAPPENS TO A RESEARCH PLATFORM WHEN THE PROJECT ENDS? FOCUS ON SUSTAINABILITY

Building a long-lasting HFS capacity through ERA4TB

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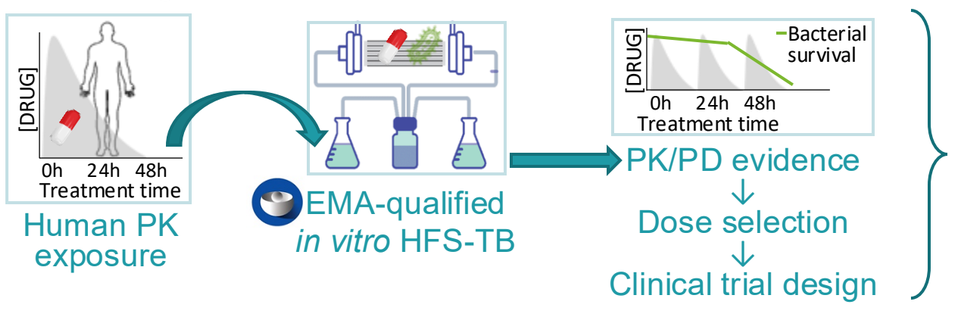
FACTS & FIGURES

Start date:	01/01/2020
End date:	31/12/2026
IMI funding:	89 815 600,00 €
EFPIA in kind:	118 148 291,00 €
Total Cost:	207 963 891,00 €
Project website:	https://era4tb.org/
Social media:	LinkedIn: @ERA4TB

CHALLENGE

GENERAL CHALLENGE ADDRESSED BY ERA4TB

Anti-TB drugs development needs translational preclinical models that better bridge experimental studies and human treatment.



The Hollow Fibre System for tuberculosis (HFS-TB), qualified by the European Medicines Agency (EMA), combines simulated human drug exposure with continuous *Mycobacterium tuberculosis* culture to generate PK/PD for dose selection and clinical-trial design while reducing reliance on animal models.

CHALLENGE ADDRESSED BY MY RESEARCH

Despite its translational potential, HFS-TB was technically complex, resource-intensive and insufficiently standardized for reproducible implementation.

PROMISING TECHNOLOGY ≠ READY-TO-USE CAPABILITY

Complex set up	Limited standardization	Specialized training	Post-project sustainability

My challenge was to turn this technology into a robust biosafety level 2 and 3 (BSL-2 / BSL-3) capability that could be standardized, transferred to others and sustained beyond ERA4TB.

METHODOLOGY



MY ROLE

Coordinated technical implementation, standardization, training and sustainability actions.

- **CAPABILITY PATHWAY**

1. BUILD
- **Adapt** BSL-2 and BSL-3 facilities
- **Select** equipment, cartridges and materials
- **Design** multidisciplinary and experimental workflows

2. STANDARDIZE
- **Develop** SOPs, manuals and QC procedures
- **Evaluate** critical experimental variables
- **Map** time, effort and operational bottlenecks
- **Refine** PK/PD experimental procedures

3. TRANSFER
- **Train** colleagues for independent operation
- **Expand** application across drugs and combinations
- **Connect** with the wider HFS community

4. SUSTAIN
- **Assess** spin-off vs service-model feasibility
- **Validate** market need with potential users
- **Implement** a quality-management strategy

RESULTS

ERA4TB transformed HFS-TB infrastructure into an operational, standardized, transferable and sustainability-oriented preclinical capability.

1. BUILT

A HIGH-CAPACITY HFS-TB EXPERIMENTAL CAPABILITY WAS ESTABLISHED IN EUROPE IN BSL-2 AND BSL-3.



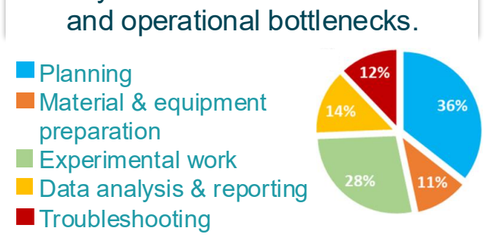


Universidad Zaragoza
- University of Zaragoza, Spain.
- Capacity: up to 32 cartridges in BSL-2 and 12 in BSL-3

2. STANDARDIZED

CRITICAL EXPERIMENTAL AND OPERATIONAL VARIABLES WERE DEFINED

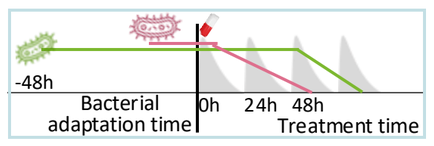
Effort monitoring of HFS-TB assays defined realistic timelines and operational bottlenecks.



ERA4TB Deliverable 2.1

Key controls for robust and reproducible HFS-TB studies were established:

Drug-Fibre compatibility tests	Bacterial adaptation time	Sampling strategy



Article PMID: 38632083

3. TRANSFERRED

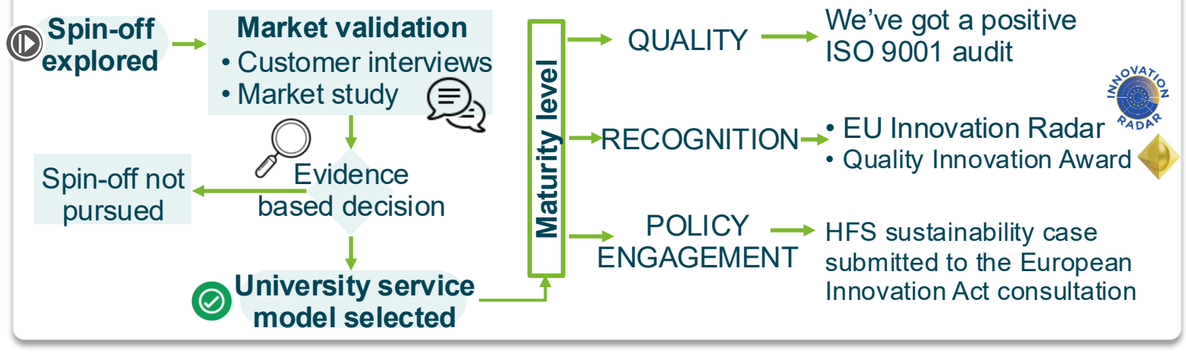
KNOWLEDGE TRANSFERRED TO A TRAINED TEAM AND THE WIDER HFS COMMUNITY

Initial implementation → Trained UNIZAR team → Wider HFS community

OUTPUTS:
- ASSAY TOOLKIT: 10 anti-TB drugs + BPaL — ***Article PMID: 41940336***
- PRACTICAL GUIDE: EPASG-endorsed HFS guidance — ***Article PMID: 42325263***

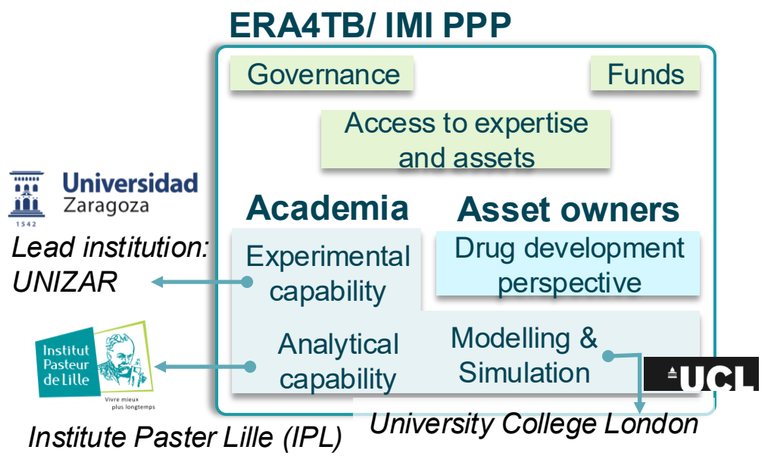
4. SUSTAIN

A SUSTAINABILITY PATHWAY WAS BUILT



VALUE OF IMI COLLABORATION

ERA4TB provided the cross-sector expertise and asset access needed to turn a newly implemented HFS-TB platform into a drug-development capability



CAREER IMPACT

WHAT I LEARNED: How to turn a complex research technology into an operational capability connected to drug development needs

SKILLS I DEVELOPED: Technical leadership | Cross sector collaboration | Quality management | Market validation

HOW IT SHAPED MY CAREER: Expanded my career from experimental research towards **translational R&D**, platform **leadership** and **industry-facing** roles.

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