



LSFM4LIFE

# Production & Characterization of endocrine cells derived from Human Pancreas Organoids for cell-based therapy of Type 1 Diabetes

8 PARTNERS

6 COUNTRIES

5.1<sup>ME</sup> FUNDING FROM THE EU

4 YEARS PROJECT DURATION

START 2016 END 2019

## H2020 PROJECT TACKLES DIABETES

The LSFM4LIFE project aims to develop clinical-grade (GMP-compliant) **Human Pancreas Organoids** (hPOs) for the cell-based therapy of Type 1 Diabetes (T1D).

This research project, funded by the European Union's Horizon 2020 Programme, involves **8 teams from 6 different European countries**. These partners are dedicated to develop tools and technologies for a cell-based therapy.

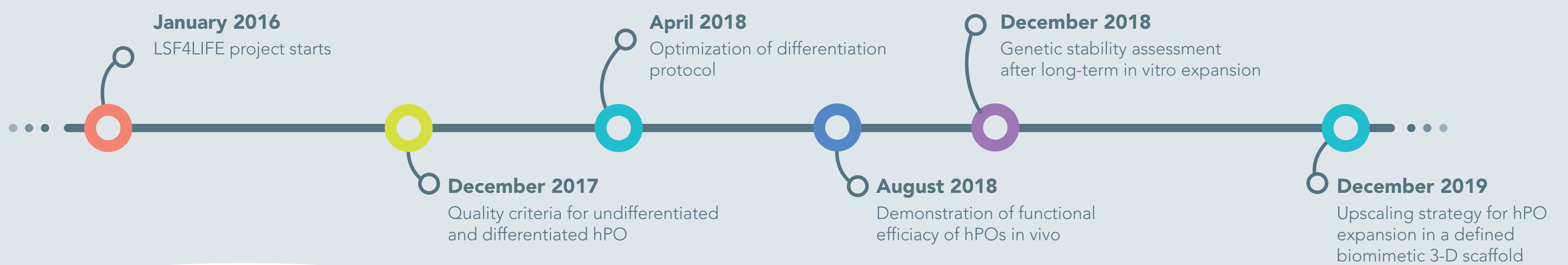
By achieving its goal, LSFM4LIFE will enable hPOs transplantation that will **relieve T1D patients from monitoring and injecting insulin**.

The ambition of LSFM4LIFE is advancing the state-of-the-art in several biotechnological areas on the way towards the production of human pancreas organoids following good manufacturing practice (GMP) requirements.

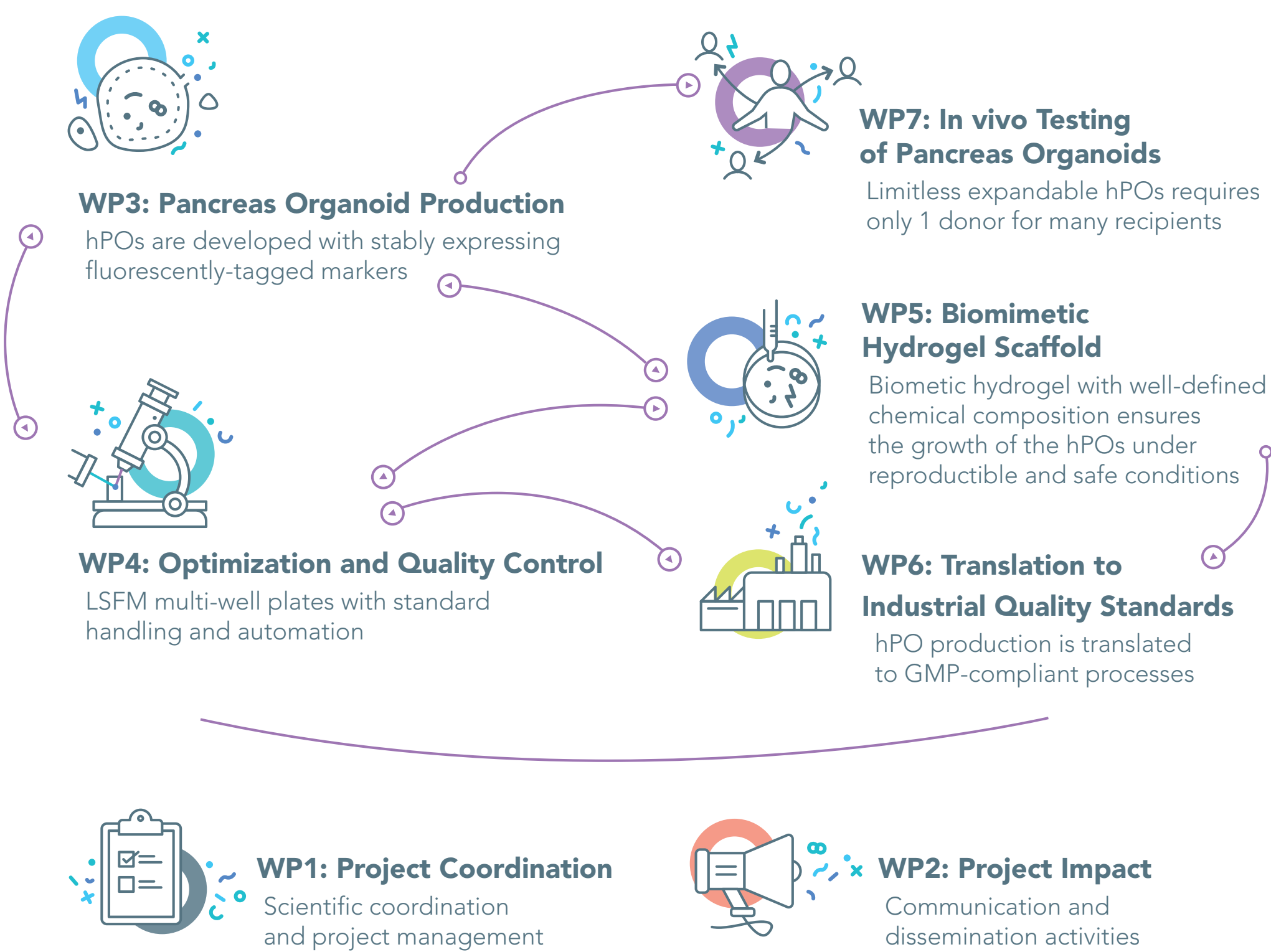
## SPECIFIC OBJECTIVES OF LSFM4LIFE

1. Producing long-term renewing, human pancreatic organoid (hPO) lines and assessing their genetic stability and in vivo safety.
2. Identifying the optimal expansion and differentiation conditions of hPO by employing high-throughput screening.
3. Standardizing the manufacture of hPO under xenogen-free and well-defined biochemical conditions, by employing new biomimetic scaffolds.
4. Achieving regulatory-compliant GMP production of hPO for pre-clinical studies and phase I clinical trials.

## LSFM4LIFE MILESTONES



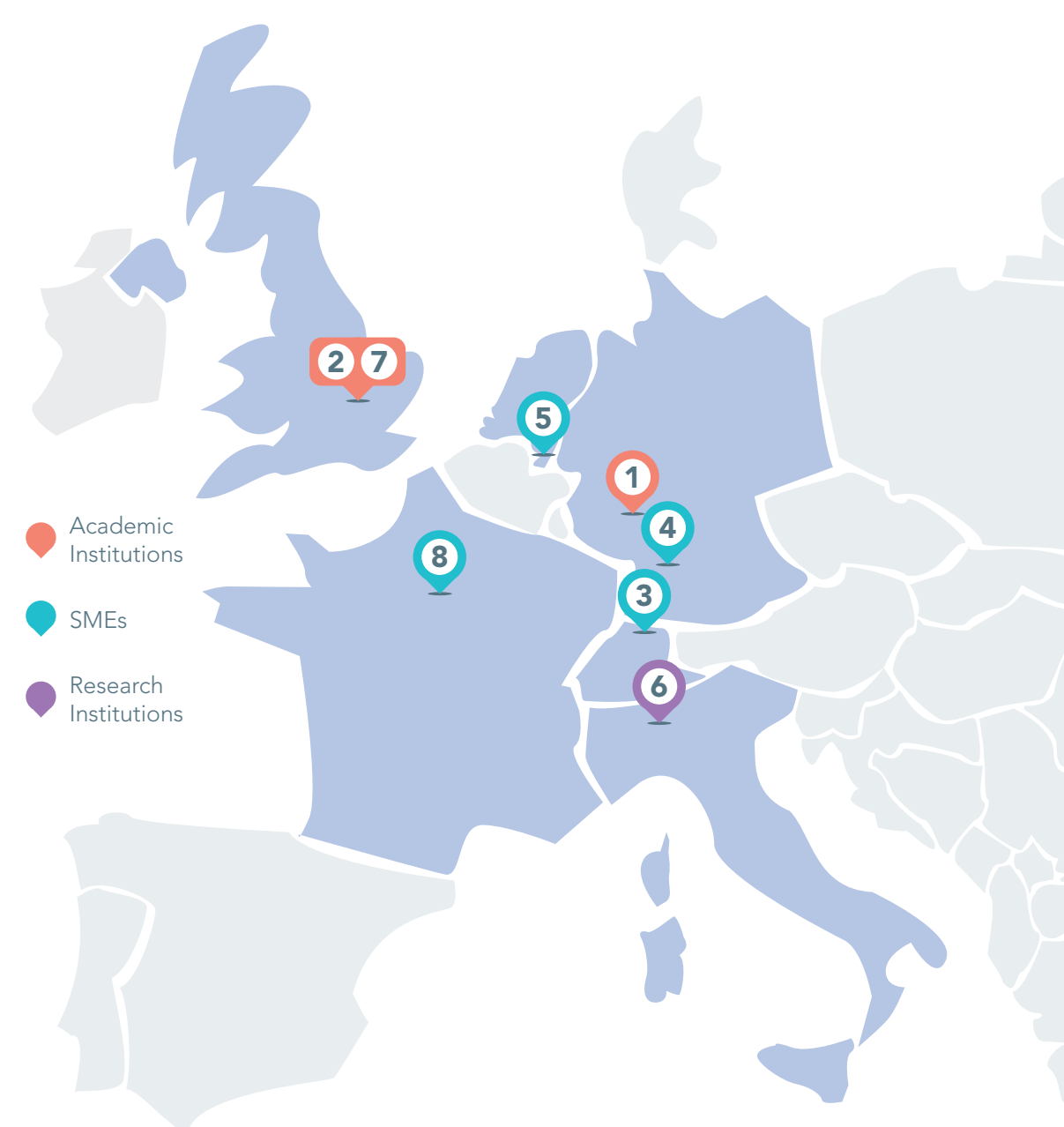
## INNOVATION



## EUROPEAN PARTNERS

Establishing pancreas organoids for the therapy of T1D is an innovative process. Its accomplishment requires a critical mass of experts that is available at the European level.

Acknowledged experts from both academia and industry have multi-disciplinary expertise.



**1** **GOETHE UNIVERSITÄT FRANKFURT AM MAIN**  
Leader of the project, optimization and quality control of hPO

**3** **insphero**  
Characterization and quality control of hPOs by standard non-imaging luminescent and fluorescent endpoint assays

**7** **UNIVERSITY OF CAMBRIDGE**  
Implantation of hPO in vivo and functional assays procedure

**2** **Gurdon INSTITUTE**  
Pancreas organoids production and differentiation to beta-cells

**4** **CELLENDES**  
Biomimetic hydrogel scaffolds development for the expansion of pancreatic organoids

**8** **SPARKS & CO**  
Communication, dissemination and exploitation

**5** **Pharma Cell**  
Translation of the research protocol to a regulatory-compliant GMP process

**6** **Fondazione IRCCS Ca' Grande Ospedale Maggiore Policlinico** **Regione Lombardia**  
GMP batch of undifferentiated hPO qualified for clinical trial



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