

# ESPACE

Human Cell Atlas of the Pancreas —  
Expression & Spatial Pancreas Atlas Consortium Europe



**Acronym**

ESPACE

**Full Title**

Human Cell Atlas of the Pancreas — Expression & Spatial Pancreas Atlas Consortium Europe

**Programme**

Horizon 2020: Better health and care, economic growth and sustainable health systems. Topic: SC1-BHC-31-2019: Pilot actions to build the foundation of a human cell atlas Research and Innovation Action (RIA).

**Grant Agreement Number**

874710

**ABSTRACT**

The human pancreas is a physiologically unique organ involved in the secretion of several hormones, such as insulin, thus regulating blood sugar levels, as well as the secretion of enzymes for the digestive system. Several human diseases are associated with the pancreas: Pancreatic and enocarcinoma is one of the most aggressive cancers in humans and pancreatitis is a common potentially life-threatening disorder related to adverse lifestyle conditions. A very common chronic disease affecting the pancreas is Diabetes mellitus, a metabolic disorder that is characterised by high blood sugar levels due to the lack of insulin produced in the pancreas. Despite its high physiological importance, the high autolytic activity makes the pancreas a challenging tissue to study.

The Expression and Spatial analysis Pancreas Atlas Consortium Europe, ESPACE, has formed as merger of three prior Human Cell Atlas (HCA) early pilot studies of the pancreas funded by the Chan Zuckerberg initiative. Based on the there developed methods and standards for sample procurement, single cell profiling, spatial proteomics, and computational pipelines we will here build a first version of the Human Cell Atlas of the Pancreas. We will integrate molecular profiles, including transcriptome and epigenomics data from more than 1 million single cells jointly together with tissue proteomics allowing to address fundamental questions of cell state and phenotype in healthy adults and during foetal development. Thus, we will provide a first version of an open single cell repository of the pancreas built upon the Data Coordination Platform of the HCA.

Exploring the benefit of the HCA of the pancreas for tackling pancreatic diseases, ESPACE will reach out into types 2 diabetes. Besides creating a unique and first of its kind comprehensive atlas of the human pancreas the methods and standards developed by ESPACE will be of high relevance for HCA projects in other organs.

## Duration

24 months (01/01/2020 - 31/12/2021)

## Project Funding

4 962 494,75 EUR

## Coordinator

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## Partners

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- Fundacio Centre de Regulacio Genomica (CRG)/ Centro Nacional d'Análisis Genómico (CNAG-CRG), Spain
- The Research Fund of Hadassah Medical Organization (RFHMO), Israel
- Leiden University Medical Center (LUMC), The Netherlands
- Koninklijke Nederlandse Akademie Van Wetenschappen (KNAW), The Netherlands
- Royal Institute of Technology (KTH), Sweden
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## Project Management

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## Project Website

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