SIGNATURE

SInGle cells iN AuToimmUne inflammatoRy disEases

Training a new generation of scientists to single-cell technologies and advanced bioinformatics for the identification of mechanisms of response and non-response to therapy in autoimmune disorders.

The SIGNATURE Doctoral Network

Treatment response and disease progression remain unpredictable in autoimmune diseases. Single cell technologies and advanced bioinformatics offer new insights into the identification of underlying cellular mechanisms to consider patient stratification. The SIGNATURE Doctoral Network will prepare a new generation of scientists through a multidisciplinary training program for molecular profiling and integration of multi-omics single cell data from design to analysis. Trained by European academic and industry experts. SIGNATURE will provide skills to conduct research to increase the capacity for innovation in Europe to predict the best therapy for each patient with clinically heterogeneous diseases.

This project has received funding from the European Union's Horizon Europe Research and Innovation Programme under the Marie Skłodowska- Curie grant agreement No 101072891.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or European research Executive Agency. Neither the European Union nor the granting authority can be held responsible for them.

Funded by the European Union

SIGNATURE
SInGle cells iN AuToimmUne inflammatoRy disEases

10 Doctoral Candidates will be recruited and trained through individual research projects.

DC1 Determining the Molecular Patterns of Blood and Tissues in SLE.

DC2 Spatial imaging histology/pathology and liquid biopsy.

DC3 Delineating cellular interaction networks in autoimmune diseases at single-cell resolution.

DC4 Autoimmune patient heterogeneity defined by mucosal immune fingerprinting.

DC5 Functional single cell proteomics for the precision diagnosis of autoimmune diseases.

DC6 Modelling the heterogeneity of disease progression using trajectory inference.

DC7 Graph neural network analysis of spatial molecular data in systemic autoimmune disease.

DC8 Associating deep learning with prior knowledge to predict the efficacy of targeted therapies in patients suffering autoimmune diseases.

DC9 Agent-based modelling approaches to analyse the development of autoimmune diseases. Development of an in silico trial prediction model for clinical and molecular trajectories.

DC10 Computational solutions for integrating different types of single cell and tissue data to stratify patients and predict treatment response in immune disorders.

Funded by the European Union