

# ENDOTARGET

## Systemic Endotoxemia as the driver of chronic inflammation – Biomarkers and novel therapeutic targets for Arthritis

Rheumatic diseases (RDs) and musculoskeletal diseases affect more than 40% of Europe's population<sup>1</sup> and cause significant disability, pain, reduced lifespan, and a very high economic burden of more than 240 Billion € per year<sup>2</sup>. But by now it is still unclear, which mechanisms and triggers are responsible for the onset of rheumatic diseases. Due to this knowledge gap, only symptomatic therapies are available for patients yet. The ENDOTARGET project addresses this problem and aims to explore the significance of the gut microbiome as a driver of chronic systemic inflammation and its role in the pathogenesis of rheumatic disease.

<sup>1</sup> <https://cordis.europa.eu/article/id/97231-ep-calls-to-recognise-the-extraordinary-burden-of-rheumatism-and-arthritis>

<sup>2</sup> European Alliance Of Associations For Rheumatology (EULAR), position paper, November 2011 (H2020 Framework Programme)

### CAUSE

Intestinal dysbiosis of gut microbiome (1) & increased gut permeability (2)

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Translocation and circulation of bacterial compounds in the blood (3)

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Systemic endotoxemia & Inflammation in joints

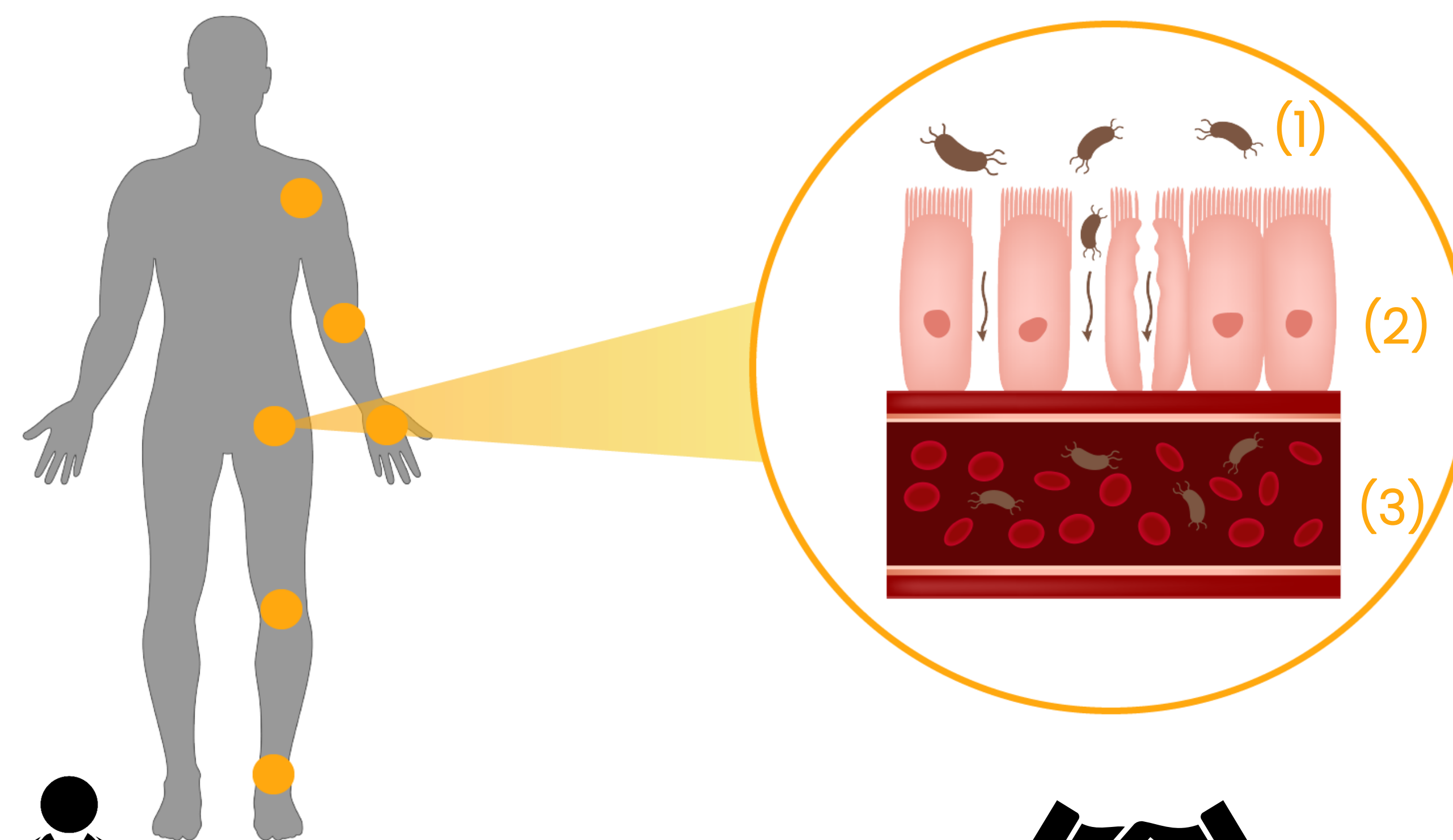
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Chronic rheumatic disease (RDs)

### AIMS

👥 Personalised Therapies and Diagnosis of rheumatic diseases by:

- Novel drugs
- Digital prediction tool for clinicians
- Nutritional interventions

🔍 Identification of risk parameters for disease onset



### IMPACT

#### Clinicians

We will develop an Artificial Intelligence based supporting tool for RD prediction (risk factor profiles) and therapy selection, enabling a personalised treatment of the patient.

#### Patients

We will develop digital and personalized diagnostic approaches for RDs, enabling an early diagnose and intervention of RD onset. Based on that, a tailored strategy can be selected to treat the cause of RDs (new drugs, diet changes, etc.). Thus, the patient must struggle less with therapeutic side effects.

#### Public Authorities

We will produce actionable recommendations to tackle RDs, which will reduce the risk of RD onset as well as the associated disease-adjusted life years. This will result in a decrease of healthcare costs for RDs and simultaneously the possibility to allocate saved healthcare costs efficiently.

#### Industry

We will contribute to the development of new effective drugs and adjuvants for RD treatment.

#### Citizens

We will improve the awareness & self-management (e.g., guidelines, software tools) of citizens towards RDs. Thus, the project will reduce the lifestyle risk factors of chronic disease onset and will improve the citizens' quality of life.

#### Research and Academia

We will provide a deeper understanding of the events triggering health to RD transition, bringing the research in the field of chronic inflammation forward.

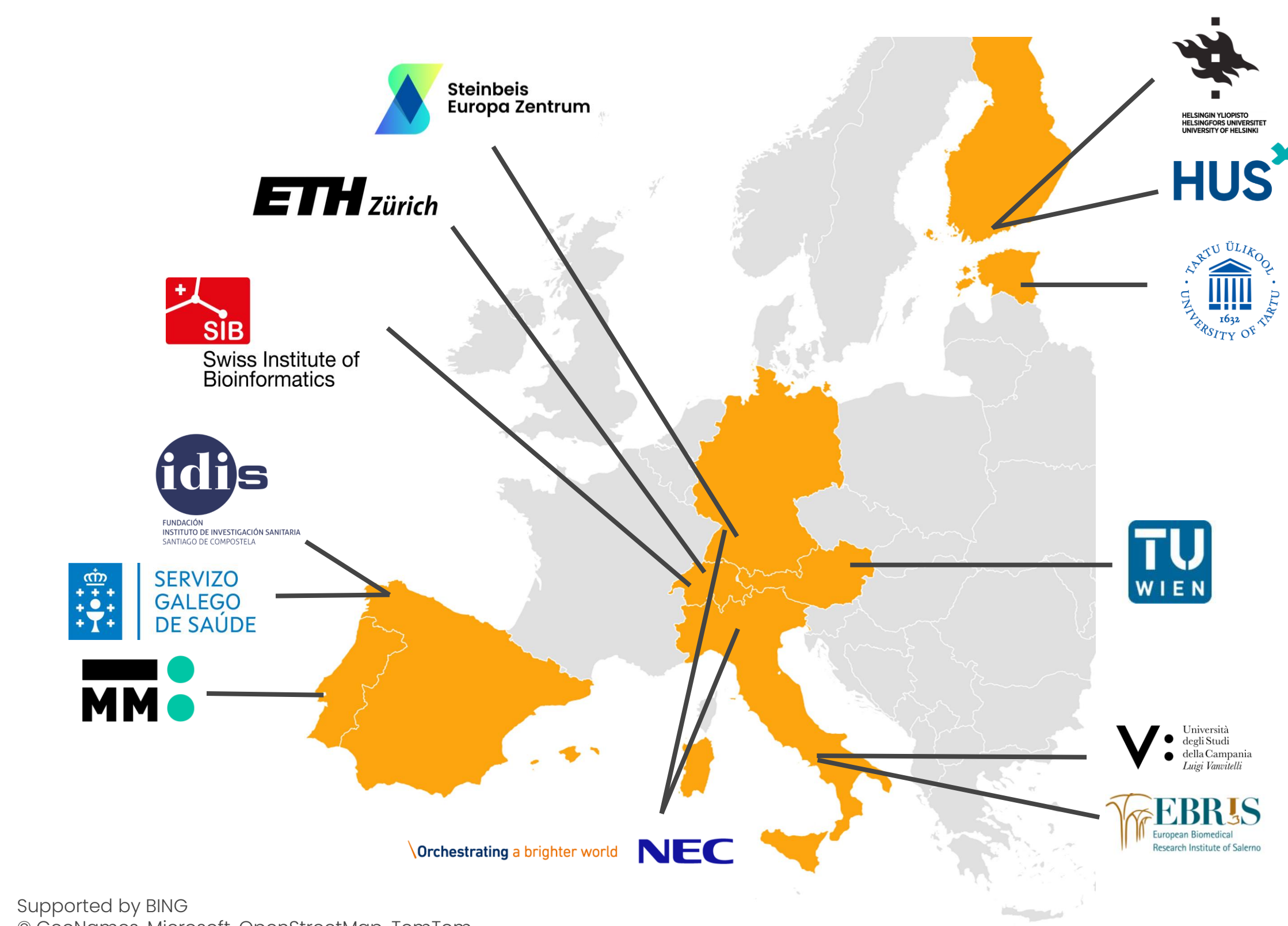
### SUPPORT

👥 14 Partners from 8 countries

€ Budget:  
~ 7 million € from the EU  
(Horizon Europe)

+ 1.8 million € from SERI\*

\*Swiss State Secretariat for Education, Research and Innovation



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Website:

[www.endotargetproject.eu](http://www.endotargetproject.eu)