

Benedicto
Crespo-Facorro



B3Phrenia

Dysfunction of the Blood-Brain Barrier in schizophrenia: molecular underpinnings of vulnerability or resilience

Project Coordinator:

Benedicto Crespo-Facorro, Institute of biomedicine-IBIS, CIBERSAM, Sevilla, Spain

Project Partners:

Matthew Campbell, Trinity College Dublin, Ireland

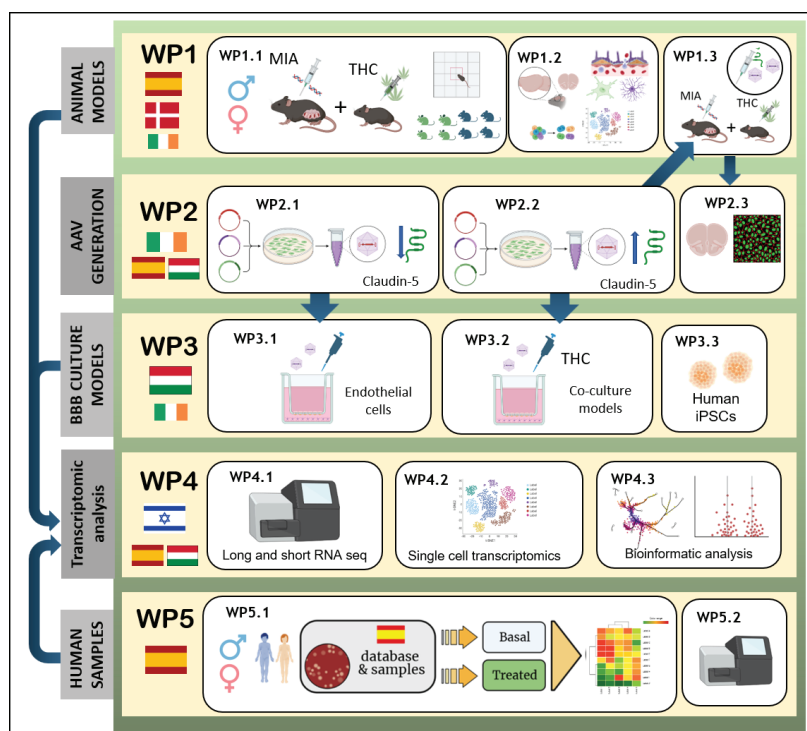
Maria A. Deli, Biological Research Centre, Szeged, Hungary

Hermona Soreq, Hebrew University of Jerusalem, Jerusalem, Israel

Konstantin Khodosevich, Biotech Research and Innovation Centre, Copenhagen, Denmark

Schizophrenia (SZ) is a sexually dimorphic neurodevelopmental disorder that involves both genetic predisposition and environmental risk factors in early and later life (i.e., maternal immune activation (MIA) by prenatal infection and cannabis use) that are associated with increased risks of SZ. However, the underlying biological mechanisms remain to be elucidated.

The aim of the B3phrenia project is to investigate the link between blood-brain barrier (BBB) tightness and the vulnerability or resilience to SZ, to explore sex-dependent molecular changes and to characterize BBB adaptation to risk factors (MIA/cannabis) to understand the neurobiological bases of SZ. Combined in vivo and in vitro analyses of molecular alterations of the integrity of BBB on animal models and iPSCs reprogrammed from patients with SZ will shed light on our understanding of the complex relationships between cannabis, sex, and the function and structure of BBB, and so enhance our knowledge about resilience and vulnerability to SZ.



The interdisciplinary team of world-class researchers will employ state-of-the-art techniques such as transcriptome and proteome profiles of peripheral blood mononuclear cells obtained from a unique clinical cohort of first-episode SZ patients to identify molecular pathways of BBB dysfunction and suitable sex-modulated targets with the aim of enhancing resilience and develop refined stratification schemes of SZ patients.