Santiago Canals

IBRAA

Inflamed Brain Response in Alcohol Addiction: Understanding the role of neuroinflammation, immunotypes and gut-brain reactivity for heterogeneity in disease course and therapy response

Project Coordinator:

Santiago Canals, Instituto de Neurociencias, Spanish National Research Council (CSIC), Universidad Miguel Hernández (UMH), San Juan de Alicante, Alicante, Spain

Project Partners:

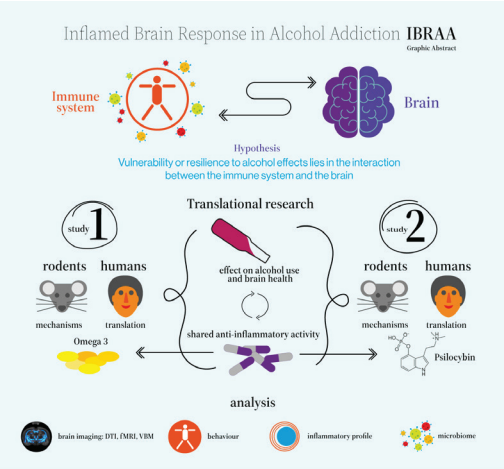
Sophie Layé, NUTRINEURO UMR1286 INRAE, Univ BORDEAUX, BORDEAUX, France

Amandine Luquiens, Universitary hospital of Nîmes (CHU de Nîmes), Addiction Dept., Nîmes, France

Wolfgang Sommer, Institute of Psychopharmacology at Central Institute for Mental Health (CIMH), Mannheim, Germany

Philippe De Timary, Institute of Neuroscience, Addiction and Mental Health Laboratory, Université catholique de Louvain, Brussels, Belgium

Raul Cristian Muresan, Asociatia Transylvanian Institute of Neuroscience, Cluj-Napoca, Romania



Alcohol addiction is a widespread mental health condition that lacks effective treatment options for many individuals. Even low to moderate levels of alcohol consumption can have detrimental effects on health, but people's responses to alcohol vary greatly within the population. We believe that a significant portion of this variability stems from the interaction between the immune system and the brain. Our research focuses on studying vulnerability in individuals with alcohol dependence during the early stages of abstinence, which represents a critical period for relapse prevention. We hypothesize that individuals with heightened immune reactivity will experience an intensified neuroinflammatory response during early abstinence. Conversely, less reactive immunotypes may offer protection against these negative outcomes. This research seeks to define biomarkers that identify vulnerable individuals to brain damage and relapse risk and provide effective treatments. We will explore interventions that can reduce the neuroinflammation that occurs soon after alcohol withdrawal. Our main strength is a multidisciplinary team that brings together experts in the field with complementary skills to understand vulnerability and resilience factors in Alcohol Use Disorders (AUD). The team's background ranges from medicine, neurobiology, and immunology, to physics, advanced brain imaging, and data science, and includes patient organizations for proper integration and communication.

If our hypotheses are strongly supported, it will lead to modifications in clinical practice, including the use of nutritional supplements as potential treatments to enhance resilience in AUD individuals.