

Group Name: Neuropharmacology, Molecular Immunobiology and Behavior

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Group Web: Femenia group (IN-website)

Title of the MRP:

From Immunity to Mind: Neurobiological Mechanisms Linking Stress, Metabolism, and Cognition

Summary of the MRP:

This project seeks to understand how innate immune signals are integrated into brain function to shape emotional and cognitive processes. We will focus on key mechanisms connecting immune pathways with neuroplasticity and metabolic processes, and how these interactions shape cognitive performance and stress resilience.



A key focus will be on pathways that convey peripheral immune information to the brain, including the modulatory role of the gut microbiome and exercise. Through combined molecular, neurochemical, and epigenetic approaches, we will map intracellular signaling cascades underlying immunometabolic control. By targeting specific cell populations, we aim to link these mechanisms to distinct behavioral phenotypes.

Methods and technology involved in the MRP:

Gene expression, qRT-PCR, western blot, immunofluorescence, microscopy, cell culture and analyses of rodent behavior tests

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