

Jung-Hua YEH équipe - Evolution du système immunitaire et des interactions hôtes-pathogènes. UMR 7353

From Evolution to Function: discovery of novel immune regulators

Activation of T cells is essential for the host defense against pathogens, and more than 3,000 genes are for example up-regulated following T cell activation. Crtam (Class-I MHC-Restricted T cell Associated Molecule) is a transmembrane receptor conserved in all vertebrates and with an extracellular immunoglobulin domain of the ?C1? type, a group typically associated with adaptive immunity.

My investigation showed that Crtam contributes to the regulation of tpolarity of T cells and to the secretion of cytokines such as interferon (IFN&#61543;&#61481; and interleukin 22 (IL22), and that these functions rely on a PDZ domain interaction with Scrib inside the cell. The importance of Crtam in the immune function has also been demonstrated in several animal models of human autoimmune and infectious diseases, such as arthritis and listeriosis.

To further illustrate how fonctionnal studies can benefit from evolutionary biology, I will also discuss the planned functional investigation of a plastic and rapidly evolving family of the immune system: the Leukocyte Immunoglobulin-like Receptor (LILR) gene family