New publications in the **PARATUBERCULOSIS database** (1264)


Sardinia acts as an ideal setting for multiple sclerosis (MS) studies because its prevalence of MS is one of the highest worldwide. Several pathogens have been investigated amongst 119 Sardinian MS patients and 117 healthy controls to determine whether they might have a role in triggering MS in genetically predisposed individuals. *Mycobacterium avium* subsp. paratuberculosis (MAP) and Epstein Barr virus DNA were detected in 27.5% and 17.3%, respectively, of the MS patients. Moreover an extremely high humoral immune response against MAP recombinant protein MAP FprB (homologous to human myelin P0) was observed, whereas no significant results were found against *Mycobacterium tuberculosis* FprA and *Helicobacter pylori* HP986 protein.

New publications in the **CROHN'S DISEASE AND PARATUBERCULOSIS database** (721-724)


The Nucleotide-binding oligomerization domain, Leucine-rich Repeat and Pyrin domain containing (NLRP) family and corresponding inflammasomes are important intracellular sensors of microbial pathogens and stress signals that promote caspase-1-mediated release of IL-1 beta and IL-18. Studies using targeted disruption of NLRP1 and NLRP3 have revealed key roles for these inflammasomes in innate immunity and inflammation, as well as in autoimmune diseases, metabolic disorders, and cancers. The newly identified family members NLRP6, NLRP10, and NLRP12 are emerging as important molecules regulating gut homeostasis in mouse models, as well as being correlated to human diseases. Here, we review our current knowledge of NLRP1 and NLRP3 biology, from molecular structure, function, and proposed models of activation to associations with several human disorders. New insights into novel NLRPs that act as regulators of intestinal immunity are also discussed.


Lipid-specific T cells are important participants in human immune responses. Recognition of lipid antigens contributes to host defense against pathogens that can cause debilitating diseases, including mycobacterial, viral, and parasitic infections. Lipid-specific T cells also play important roles in various autoimmune diseases, atherosclerosis, and in tumor surveillance. A better understanding of the mechanisms that regulate lipid-reactive T-cell functions will enable the development of novel therapies across a wide range of diseases. In recent years, our laboratory has investigated lipid antigen specificities, mechanisms of lipid antigen presentation, molecular interaction of lipid antigens with CD1 antigen-presenting molecules, and the pathogenic and regulatory functions of lipid-specific T cells in a variety of disease.
settings. In this review, we present recent data that illustrate the critical role played by lipid-specific immune responses in host protection, with a particular focus on human studies.

Microarray-based gene expression profiling reveals the mediators and pathways involved in the anti-arthritic activity of Celastrus-derived Celastrol 
International Immunopharmacology, 13, 499-506

Rheumatoid arthritis (RA) is an autoimmune disease characterized by chronic inflammation of the joints. The prolonged use of non-steroidal anti-inflammatory drugs and other newer drugs is associated with severe adverse reactions. Therefore, there is a need for newer anti-arthritic agents. Celastrol, a bioactive component of the Chinese herb Celastrus, possesses anti-arthritic activity as tested in the adjuvant arthritis (AA) model of rheumatoid arthritis (RA). However, the mechanism of action of Celastrol has not been fully defined. We reasoned that microarray analysis of the lymphoid cells of Celastrol-treated arthritic animals might provide vital clues in this regard. We isolated total RNA of the draining lymph node cells (LNCs) of Celastrol-treated (Tc) and vehicle-treated (Tp) arthritic Lewis rats that were restimulated in vitro with the disease-related antigen, mycobacterial heat-shock protein 65 (Bhsp65), and tested it using microarray gene chips. Also tested was RNA from LNCs of control arthritic rats just before any treatment (T-0). Seventy six genes involved in various biological functions were differentially regulated by Bhsp65 in LNCs of Tp group, and 19 genes among them were shared by the Tc group. Furthermore, a group of 14 genes was unique to Tc. When Tc and Tp were compared, many of the Bhsp65-induced genes were related to the immune cells, cellular proliferation and inflammatory responses. Our results revealed 10 differentially expressed genes and 14 pathways that constituted the "Celastrol Signature". Our results would help identify novel targets for RA therapy. (C) 2012 Elsevier B.V. All rights reserved

The Inositol Phosphatase SHIP-1 Inhibits NOD2-Induced NF-kappa B Activation by Disturbing the Interaction of XIAP with RIP2 
Plos One, 7, SHIP-1 is an inositol phosphatase predominantly expressed in hematopoietic cells. Over the ten past years, SHIP-1 has been described as an important regulator of immune functions. Here, we characterize a new inhibitory function for SHIP-1 in NOD2 signaling. NOD2 is a crucial cytoplasmic bacterial sensor that activates proinflammatory and antimicrobial responses upon bacterial invasion. We observed that SHIP-1 decreases NOD2-induced NF-kappa B activation in macrophages. This negative regulation relies on its interaction with XIAP. Indeed, we observed that XIAP is an essential mediator of the NOD2 signaling pathway that enables proper NF-kappa B activation in macrophages. Upon NOD2 activation, SHIP-1 C-terminal proline rich domain (PRD) interacts with XIAP, thereby disturbing the interaction between XIAP and RIP2 in order to decrease NF-kappa B signaling.