

# Mission statement

The aim of the VIB-UGent Center for Inflammation Research (IRC) is to unravel the mechanisms of immunity and inflammation for better prevention and therapy of human chronic disease.

Inflammation is the first response of the immune system to infection or tissue injury, leading to protection of the body against these insults. Chronic inflammation can, however, be a maladaptive response and is at the origin of chronic diseases like asthma and COPD, rheumatoid arthritis (RA), inflammatory bowel disease (IBD), psoriasis, multiple sclerosis, certain forms of cancer, and even atherosclerosis and obesity. These diseases are amongst the most common in Western society and are clearly on the rise, posing a significant public health problem that will put an increasing load on our health expenditure. With an ageing population, it is predicted that inflammatory diseases will consume up to one-third of all health related costs by 2030. A better understanding of the initiation and progression of inflammatory disease is therefore high on the research agenda of many big funding agencies in the EU, US and Japan. The research of the various IRC units is focused on molecular mechanisms of inflammation in pathologies such as allergy, autoimmune diseases, cancer, infectious diseases and senescence. At the heart of this research is the investigation of inter- and intracellular signaling pathways in innate and adaptive immune cells and barrier cells of the skin, lung and gut. IRC is studying these molecular mechanisms mainly in cellular and animal model systems by using the most advanced methods of molecular biotechnology, cell biology and immunology.

Several high-end core facilities support and improve our research activities: microscopy, flow cytometry, transgenesis, cell culture, recombinant protein technology. Moreover, the department is developing novel technology to study and intervene in human diseases more effectively, with the ambition of translating research findings into innovative ways for diagnosis and therapy. Identification and validation of suitable target molecules is therefore a major challenge for the basic research of the department. In principle, an interesting molecule can be analyzed entirely within the IRC, starting at molecular and subcellular levels, going on to cell biology and animal models, and culminating in clinical trials in close collaboration with clinical or industrial partners. This versatility of the IRC is one of its strengths.

The research groups actively collaborate within and outside the IRC to accelerate interdisciplinary discoveries. We aim to translate the acquired basic knowledge into economic value and have created two spin-off companies in the past. Many IRC units are actively involved in strategic international collaborations and alliances with high added value with academic and industrial partners.

Finally the IRC considers it important to contribute actively to the training of high-quality scientists in biomedical research. We provide an exiting environment for the next generation of scientists. We believe responsible scientific freedom in a good environment is the best motto for scientific breakthrough discoveries.

**Prof. Dr. Bart Lambrecht**  
Departmental Director