Immune System Development and Regulation Groups

Research involves a series of internationally recognised research groups investigating different aspects of immune system control. These groups study basic mechanisms and apply this knowledge to selected diseases with the aim of identifying improved methods of treatment. Strengths in these areas are recognised through the establishment by the Medical Research Council of the Birmingham Centre for Immune Regulation. The Centre was established in 1999 to provide a focus for existing immunology programmes in Birmingham and to add value by promotion collaboration and providing key technologies fundamental to state of the art immunological research.

By gaining insights into the microenvironmental control of immune responses, the global aim of our research is to gain a better understanding of the cellular and molecular mechanisms controlling autoimmunity, immune-mediated inflammatory disease and infectious disease.

Efforts are focussed on common diseases involving autoimmune or dysregulated responses which are associated with a major health burden and socio-economic impact. These include responses to chronic viral infection, selected bacterial infections, inflammatory disease in joints, kidney and liver, autoimmune systemic vasculitis and autoimmune islet destruction in diabetes.

Defining the molecular basis of chronic inflammation is a major focus of research that is already identifying convergent pathways and providing novel therapeutic targets. Birmingham has been at the forefront of research into chronic inflammation for more than 10 years and we are exploiting this strong base in biomedical research to develop translational studies in patients and implement new therapies for chronic inflammatory disease.

Immune System Development and Regulation Groups

Immune mediated and inflammatory liver disease (/research/activity/mds/domains/immunity-infection/immune-system-dev-regulation/immune-mediated-and-inflammatory-liver-disease/index.aspx)

Microenvironmental Regulation of Antibody Response (/research/activity/mds/domains/immunity-infection/immune-system-dev-regulation/immune-mediated-and-inflammatory-liver-disease/index.aspx)

Regulation of Haematopoietic Cell Differentiation (/research/activity/mds/domains/immunity-infection/immune-system-dev-regulation/regulation-of-haematopoietic-cell-differentiation/index.aspx)

T Cell Development Function in Health and Disease (/research/activity/mds/domains/immunity-infection/immune-system-dev-regulation/T-cell-development-and-function-in-health-and-dise/index.aspx)

T Cell regulation in tolerance and autoimmunity (/research/activity/mds/domains/immunity-infection/immune-system-dev-regulation/T-cell-regulation-in-tolerance-and-autoimmunity/index.aspx)