Unraveling the Pathogenesis of Rheumatoid Arthritis

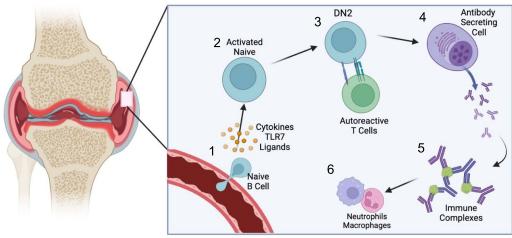
Gray Group

• We are addressing the escalating epidemic of autoimmune diseases and their economic impact.

By unravelling the crucial role of DN2 B cells in pathogenic antibody production within inflamed synovial tissue

We are investigating innovative approaches to modulate the auto-reactive potential of DN2 B Cells and their upstream precursors.

Model of RA pathogenesis



1) Self reactive naive B cells and circulating DN B cells enter the synovial joint. 2) Danger signals (including TLR7 self-ligands), T cells and cytokines activate the B cells to differentiate into activated naive B cells, 3) that further differentiate into class switched DN2 B cells. 4) DN2 B cells transition into short lived poorly mutated antibody secreting cells that generate autoantibodies. 5) These form immune complexes that 6) activate innate immune cells, including macrophages and neutrophils that drives chronic inflammation