

# BOOSTING T CELL ACTIVATION

Antigen-presenting cells, such as macrophages or dendritic cells, elicit an immune response by displaying tumor antigens bound to the major histocompatibility complex (MHC) to circulating T-cells. Simultaneous T-cell recognition of glycoproteins CD80 and CD86 on the antigen-presenting cell is also necessary for activation of a T-cell response to antigens **1**. After activation, the CTLA4 (cytotoxic T-lymphocyte-associated protein) gene is upregulated and acts to tamp down T-cell activity by binding to CD80/CD86 proteins on the surface of cells presenting antigens **2**. The monoclonal antibody ipilimumab is designed to bind to CTLA4 on the surface of regulatory and helper T cells, where it blocks the inhibitory action of CTLA4 and enhances T-cell activity against tumors **3**. The therapy has shown some success in patients who do not have BRAF mutations that can be specifically targeted.

