



New Test Form

Test Name: CD20 Detection in Whole Blood

Test #: 612

Methodology: Flow Cytometry

Normal Range:

Specimen Requirements: 10 mL whole blood EDTA (lavender top tube), ambient

Clinical Utilities: Studies of the roles played by B cells and B cell depletion in RA and SLE have suggested that B cells contribute to the expression of autoimmunity and that antibodies targeting B cells (such as anti-CD20) may substantially abate expression of disease by four possible mechanisms. First, after anti-CD20 ab binds to the extracellular domain of the CD20 ag, it may activate complement and lyse the targeted cell. Second, anti-CD20 may permit antibody dependent, cell-mediated cytotoxicity, which occurs after the Fc portion of the ab is recognized by appropriate receptors on cytotoxic cells. Third, the ab may alter the ability of B cells to respond to ag or other stimuli. Finally, anti-CD20 ab may initiate programmed cell death or apoptosis of B cells.

Treatment with anti-CD20 ab (ie. Rituximab) destroys mature B cells in central lymphoid organs, the synovium and the peripheral blood. The B cells play a critical role in RA in terms of the afferent arm of the immune response, acting as highly efficient antigen presenting cells which assist in the activation of auto-reactive T cells. B cells both respond to and produce the chemokines and cytokines that promote leukocyte infiltration into the joints, formation of ectopic lymphoid structures, angio-genesis and synovial hyperplasia. The success of B cell depletion therapy in RA may depend on disruption of some or all of these diverse functions.

Several clinical trials have provided a substantial body of evidence that the B cell depleting agent, Rituximab, alone or in combination with other disease-modifying anti-rheumatic drugs, produces profound and prolonged depletion of B cells and confers clinically meaningful benefits to patients with RA & SLE. However, with B cell targeted therapies, as with other biologics, careful monitoring of immunocompetence is required.

Our new CD20 detection assay is a useful aid in monitoring on or off label Rituximab (anti-CD20 ab) therapy in RA & SLE patients. CD20 Detection is an in-house bioassay using Analyte Specific Reagents (ASRs) for the quantitative determination of CD20 B cell depletion in blood by flow cytometry.

CPT Code: 88184

Turn around Time: Days