
Lab Dept: Flow and Immunology

Test Name: B-CELL PHENOTYPE PROFILE

General Information

Lab Order Codes: BCPP

Synonyms: B cell function, B cell immunodeficiency, B cell subset, B cell function, Common Variable Immunodeficiency, T and B cell Flow Cytometry, Helper Suppressor Ratio, Humeral Immunodeficiency, Immune Assessment, Immunodeficiency, Lymphocyte Surface Markers, Suppressor Helper Ratio

CPT Codes: B-cell Phenotyping Screen for Immunodeficiency and Immune Competence Assessment, Blood
88184 - Flow cytometry, cell surface, cytoplasmic, or nuclear marker, technical component only; first marker
88185 x7 - Flow cytometry, cell surface, cytoplasmic, or nuclear marker, technical component only; each additional marker

T and B Cell Quantitation by Flow
86355 - B cells, total count
86357 - Natural killer (NK) cells, total count
86359 - T cells; total count
86360 - T cells; absolute CD4 and CD8 count, including ratio
86356 x7 - Mononuclear cell antigen, quantitative

Logistics

Test Indications: Screening for common variable immunodeficiency (CVID) and hyper-IgM syndromes. Assessing B-cell subset reconstitution after stem cell or bone marrow transplant. Assessing B-cell response to B-cell depleting immunotherapy. Identifying defects in transmembrane activator and calcium modulator and cylophilin ligand (CAML) interactor (TACI) and B-cell activating factor receptor (BAFF-R) in patients presenting with clinical symptoms and other laboratory features consistent with CVID.

Lab Testing Sections: Flow Cytometry – Sendouts

Referred to: Mayo Medical Laboratory (MML Test: IABCS)

Phone Numbers: MIN Lab: 612-813-6711

STP Lab: 651-220-6560

Test Availability: Daily, 24 hours

Turnaround Time: Performed Monday – Friday

Special Instructions: **Restricted Draw Times:** Must be collected Monday – Thurs. There is no weekend processing. Specimens must be packaged and shipped as close to shipping time as possible. Two separate EDTA specimens are required. See [Draw Volume](#)

Specimen Whole blood

Specimen Type: Blood

Container: 2 - EDTA (purple top) tubes

Draw Volume: **NOTE: Two separate EDTA specimens are required.**

For patients <14 years:

8 mL (Minimum: 4 mL) blood

Two EDTA tubes: Each filled with 4 mL blood (OR when using minimum volumes 1 mL in the first tube and 3 mL in the second tube). Mix by gentle inversion and send immediately to the laboratory.

For patients >14 years:

14 mL (Minimum: 6 mL) blood

Two EDTA tubes: Fill the first tube with 4 mL (Minimum: 1 mL) blood and the second with 10 mL (Minimum: 5 mL) blood. Mix by gentle inversion and send immediately to the laboratory.

Processed Volume: Same as Draw Volumes

Collection: Routine venipuncture

Special Processing: Lab Staff:
DO NOT centrifuge. Specimens must remain in original collection containers.

NOTE: One EDTA tube with 4 mL (Minimum: 1 mL) MUST be stored at **Room Temperature**.

The other tube with 4 or 10 mL (Minimum: 3 or 5 mL) blood MUST be stored **Refrigerated**.

Required information with specimen: Date of draw, ordering physician name and phone number.

Patient Preparation: None

Sample Rejection: Improperly filled tubes; incomplete or mislabeled specimen; improper collection or handling of specimen resulting in poor cell viability or insufficient quantity; gross hemolysis; specimen centrifuged or aliquoted (not in original vacutainer)

Interpretive

Reference Range: The appropriate age-related reference values will be provided on the report.

Critical Values: N/A

Limitations: This assay and the reference range reported are based on analysis of B cells derived from the mononuclear cell fraction of peripheral whole blood and , therefore, results may not be identical to those performed on whole blood.

This test is a screening test and further analyses will be required to complete a diagnostic workup for common variable immunodeficiency (CVID) and hyper IgM.

This test is not indicated for the evaluation of lymphoproliferative disorders.

Timing and consistency in timing of blood collection is critical when serially monitoring patients for lymphocyte subsets.

Methodology: T- and B-Cell Quantitation: Flow cytometry
Immune Assessment B Cell Subsets: Flourescent Flow Cytometry

References: [Mayo Medical Laboratories Web Page](#) (June 2014)

Updates: 10/19/20: CVID Reflex testing will no longer be done.