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PATIENT REPORT

Patient Age/Sex: 20 years Female

Specimen Collected: 02-Feb-26 09:58

B Cell Subset Analysis |**Received: 02-Feb-26 09:58** **Report/Verified: 02-Feb-26 10:20**

Procedure	Result	Units	Reference Interval
CD19+ B cells %	25.1 H	% Lymphs	[5.3-25.0]
CD19+ B cells	451 H	cells/uL	[110-450]
CD20+ %	102.9 H	% of CD19	[90.6-102.8]
CD20+	451 H	cells/uL	[110-450]
Total Memory CD27+ %	52.8 H	% of CD19	[11.4-52.7]
Total Memory CD27+	171 H	cells/uL	[19-170]
Non switched CD27+IgD+IgM+ %	46.0 H	% of CD19	[4.5-45.9]
Non switched CD27+IgD+IgM+	94 H	cells/uL	[9-93]
Class-switched CD27+IgD-IgM-%	25.9 H	% of CD19	[3.1-25.8]
Class-switched CD27+IgD-IgM-	82 H	cells/uL	[6-81]
Transitional CD38+IgM+ %	3.9 H	% of CD19	[0.5-3.8]
Transitional CD38+IgM+	18 H	cells/uL	[1-17]
Plasmablasts CD38+IgM-%	4.2 H	% of CD19	[0.4-4.1]
Plasmablasts CD38+IgM-	9 H	cells/uL	[1-8]
Activated CD21low CD38-%	9.1 H	% of CD19	[1.2-9.0]
Activated CD21low CD38-	27 H i1	cells/uL	[3-26]

Test Information

i1: Activated CD21low CD38-

INTERPRETIVE INFORMATION: B Cell Subset Analysis

This panel identifies B-cell dysregulation. B-cells start development in the bone marrow (stem-cell, pro-B, pre-B), then transition to the spleen and lymph nodes where some mature by acquiring CD27 and switching immunoglobulin class from IgD and IgM to IgG or IgA. Class-switched B-cells may further progress to plasmablasts and finally plasma cells. Different disorders may block different parts of this pathway, disrupting immunoglobulin production.

This panel can also be used to monitor B-cell reconstitution after bone marrow transplantation or targeted B-cell depletion therapy.

This panel can assist in the diagnosis and subclassification of Common Variable Immune Deficiency (CVID). CVID is a heterogeneous group of disorders characterized by low antibody production, defective antibody responses, and recurrent infections. Most cases of CVID have a severe reduction in class switched memory B-cells (CD27+, IgD-, IgM-) that correlates with granulomatous disease. Many also have an expanded population of CD21low, CD38low B-cells that correlates with splenomegaly. Increased transitional B-cells (CD38+, IgM+) in CVID correlates with lymphadenopathy. Most CVID patients have a low percentage of plasmablasts (CD38+, IgM-) that has a correlation with autoimmune cytopenia.

Test Information

i1: Activated CD21low CD38-

Class switched memory B-cells are also low in ALPS, but are typically increased in SLE and infection.

Please note: Reference intervals for CD20+ B-cells were not established for patients less than 16 years of age. For all other B-cell subsets, reference intervals for populations younger than 16-years are adopted from literature. Piatosa B, Wolska-Kusnierz B, Pac M, Siewiera K, Galkowska E, Bernatowska E. B cell subsets in healthy children: Reference values for evaluation of B cell maturation process in peripheral blood. Cytometry Part B 2010; 78B: 372381.

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.