MAYO CLINIC
Mayo Medical Laboratories

Laboratory Service Report 1-800-533-1710

Patient Name	Patient ID	Age	Gender	Order #
SAMPLEREPORT,IABCS	SA00067319	47	F	SA00067319
Ordering Phys CLIENT,CLIENT				**DOB** 06/10/1966
Client Order # SA00067319	**Account Information**			**Report Notes**
Collected 05/05/2014 00:00	C7028846-DLMP Rochester SDSC 2 - Client Support Rochester, MN 55901			
Printed 05/08/2014 10:30				

Test	Flag	Results	Unit	Reference Value	Perform Site*
Immune Assessment B Cell Subsets, B					
T- and B-Cell QN by Flow Cytometry					
CD45 Lymph Count, Flow		1.30	thou/mcL	0.82-2.84	MCR
% CD3 (T Cells)		75	%	58-86	MCR
% CD19 (B Cells)		8	%	6-24	MCR
% CD16+CD56 (NK cells)		17	%	4-28	MCR
% CD4 (Helper Cells)		55	%	32-64	MCR
% CD8 (Supp'r Cells)		20	%	13-40	MCR
CD3 (T Cells)		975	cells/mcL	550-2202	MCR
CD19 (B Cells)		104	cells/mcL	70-409	MCR
CD16+CD56 (NK cells)		221	cells/mcL	59-513	MCR
CD4 (Helper Cells)		715	cells/mcL	365-1437	MCR
CD8 (Supp'r Cells)		260	cells/mcL	145-846	MCR
H/S Ratio		2.8		>=0.9	MCR
Analyte Specific Reagent: This test was developed and its performance characteristics determined by Mayo Clinic. It has not been cleared or approved by the U.S. Food and Drug Administration.					
Immune Assessment B Cell Subsets, B					
CD19+ % of total Lymphocytes		7.6	%	2.8-17.4	MCR
CD20+ % of total Lymphocytes		7.8	%	3.2-16.8	MCR
CD27+ % of CD19+ B cells	L	4.6	%	6.3-52.8	MCR
CD27+ IgM+ IgD+ % of CD19+ B cells		2.4	%	1.7-29.3	MCR
CD27+ IgM- IgD- % of CD19+ B cells	L	0.7	%	2.3-26.5	MCR
CD27+ IgM+ IgD- % of CD19+ B cells		0.7	%	0.0-5.3	MCR
IgM+ % of CD19+ B cells		77.2	%	26.0-78.0	MCR
CD38+ IgM- % of CD19+ B cells		13.4	%	4.1-42.2	MCR
CD38+ IgM+ % of CD19+ B cells	H	69.8	%	1.2-50.7	MCR
CD21+ % of CD19+ B cells		98.8	%	92.1-99.6	MCR
CD21- % of CD19+ B cells		0.8	%	0.2-8.6	MCR
CD19+		98.8	cells/mcL	90.0-539.0	MCR
CD20+		101.4	cells/mcL	95.0-580.8	MCR
CD27+	L	4.5	cells/mcL	18.0-145.0	MCR
CD27+ IgM+ IgD+	L	2.4	cells/mcL	4.0-85.0	MCR
CD27+ IgM- IgD-	L	0.7	cells/mcL	7.0-61.0	MCR
CD27+ IgM+ IgD-		0.7	cells/mcL	0.0-12.0	MCR
IgM+		76.3	cells/mcL	37.0-327.0	MCR
CD38+ IgM-		13.2	cells/mcL	7.0-153.0	MCR
CD38+ IgM+		69	cells/mcL	2.0-139.4	MCR
CD21+		97.6	cells/mcL	85.0-533.0	MCR
CD21-		0.8	cells/mcL	0.3-22.0	MCR
Interpretation					MCR

Performing Site Legend on Last Page of Report

* Report times for Mayo performed tests are CST/CDT

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Normal T cell, NK cell, and CD19+ B cell counts in whole blood using an age-segregated reference range.

B cell subset analysis in the PBMC preparation shows a moderate decrease in the percentage of total memory B cells (CD19+CD27+), which can be attributed to a significant decrease in the percentage of switched memory B cells (CD27+IgM-IgD-). Within the total memory B cell (CD19+CD27+) compartment, non-switched memory (margianl zone) B cells (CD27+IgM+IgD+) account for 52.4% of the cells, switched memory B cells (CD27+IgM-IgD-) constitute 15.3%, and IgM-only memory B cells (CD27+IgM+IgD-) account for 16.2%.

The findings in the memory B cell compartment pint to its skewing towards non-switched memory (marginal zone) B cells rather than switched memory B cells. This, together with the moderate increase in the percentage of transitional B cells (CD19+CD38+igM+) raises concern about impaired (but not blocked) B cell differentiation into switched memory B cells.

This result could be associated with a primary humoral immunodeficiency, such as CVID, in this patient, although decreased class-switched memory B cells have also been reported in other primary immunodeficiencies, as well as observed secondary to immunosuppressive/immunomodulatory therapy. B cell subset analysis is not diagnostic for CVID, but rather helpful for prognosis and classification.

In the context of CVID, a significant decreased in class-switched memory B-cells can be associated with splenomegaly and granulomatous disease (Wehr et al, Blood, 2008, 111: 77-85).

Reviewed by: Dr. Immunology
This assay is performed using peripheral blood mononuclear cells (PBMC) isolated from whole blood. CD19 percentage and absolute results should not be directly compared to the CD19 results from the T and B cell Surface Markers AG assay using whole blood, because cells are lost during the PBMC isolation process.

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* Performing Site:

MCR	Mayo Clinic Laboratories - Rochester Main Campus 200 First St SW Rochester, MN 55905	Lab Director:

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