Lab Dept: Flow and Immunology

Test Name: ALPS PANEL

General Information

Lab Order Codes:	ALP
Synonyms:	Autoimmune Lymphoproliferative Syndrome Panel
CPT Codes:	86359 – T cells, total count 86360 – T cells; absolute CD4 and CD8 count; including ratio 88184 – Flow cytometry, cell surface, cytoplasmic or nuclear marker, technical component only; first marker 88185 x8 – Flow cytometry, cell surface, cytoplasmic, or nuclear marker, technical component; each additional marker
Test Includes:	CD3, CD4(CD3+), CD8(CD3+), CD16+CD56(CD3-), CD19+, HLA DR+/CD3+, HLA DR+/CD3-, TCRαβ+/CD3+, TCRαβ+/CD4-/CD8-, TCRγδ+/CD3+, CD20+/CD5+, relative percentages, absolute values, and a calculated Helper/Suppressor ratio.

Logistics

Test Indications:	This test is intended for use in the workup of pediatric patients with autoimmune phenomena, lymphadenopathy, splenomegaly, and peripheral lymphocytosis to rule out ALPS as the cause. Clinical manifestations usually occur in pediatric patients with an average age of 22 months at the time of diagnosis.
Lab Testing Sections:	Flow Cytometry
Phone Numbers:	MIN Lab: 612-813-6280 STP Lab: 651-220-6550
Test Availability:	3 times weekly determined by volume. **Transport collected specimen immediately to Flow Cytometry. Routine testing is not available on weekends or holidays. Therefore, specimens cannot be used if drawn the day before a 3 day weekend such as Memorial Day, Labor Day or major holiday that falls on a Monday or Friday.**
Turnaround Time:	1 – 3 days
Special Instructions:	See Test Availability

Specimen

Specimen Type:	Whole blood
Container:	Lavender top (EDTA) tube
Draw Volume:	2 mL blood in a 2 mL Lavender (EDTA) tube Minimum volume: 0.5 mL in an EDTA microtainer
Collection:	Routine venipuncture
Special Processing:	Lab Staff: Keep specimen at room temperature and forward promptly to the laboratory. **Do Not** centrifuge, refrigerate, or freeze sample.
Patient Preparation:	None
Sample Rejection:	Specimens will not be processed that are clotted; hemolyzed; greater than 72 hours old; collected in wrong tube type (0.5 mL blood in 2 mL tube), or that have been held or handled at a temperature other than room temperature

Interpretive

Reference Range:	Age-dependant reference ranges will be provided. The immunophenotypic abnormalities associated with ALPS include TCRαβ positive CD4 and CD8 negative T-cells (so called double negative T-cells), CD5 positive B-cells and HLA-DR positive T-cells. In ALPS, all three of these subsets are elevated. Other conditions might have one or two of these subsets but ALPS has an increase in all three.
Critical Values:	N/A
Limitations:	Poor specimen quality will adversely affect the test results (see Specimen section) The single platform method is linear when the WBC count of the specimen is between 0.2 k/uL and 29.7 k/uL, and its lymphocyte concentration is between 0.1 k/uL and 9.0 k/uL.
Methodology:	Single-platform 4 color direct immunofluorescence method FDA approved for in-vitro diagnostic usage. Flow cytometric analysis based on CD45 gating strategy. In cases where the WBC count of the specimen exceeds the linearity limits of the single platform method, an alternative two-platform method will be used.
References:	Centers for Disease Control (1997) Revised Guidelines for performing CD4+ T-cell determinations in persons with immunodeficiency virus (HIV). MMWR 46(No. RR-2): 1-29

Blessing J et al (Blood, October 15 2001) Immunophenotypic profiles in families with Autoimmune Lymphoproliferative Syndrome, Vol. 98, no. 8

MultiTEST™ IMK Kit Package Insert. Becton Dickinson Immunocytometry System, December 2000

Updates:

1/24/2005: Test is all inclusive of parameters formerly included only on a reflexive basis. CPT coding updated for 2005.
10/26/2016: Draw Volume update.