

---

**Lab Dept:** Flow and Immunology

**Test Name:** ALPS PANEL

---

***General Information***

**Lab Order Codes:** ALPS

**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***

<b>Specimen Type:</b>	Whole blood
<b>Container:</b>	Lavender top (EDTA) tube
<b>Draw Volume:</b>	2 mL blood in a 2 mL Lavender (EDTA) tube Minimum volume: 0.5 mL in an EDTA microtainer
<b>Collection:</b>	Routine venipuncture
<b>Special Processing:</b>	Lab Staff: Keep specimen at room temperature and forward promptly to the laboratory. <b>Do Not</b> centrifuge, refrigerate, or freeze sample.
<b>Patient Preparation:</b>	None
<b>Sample Rejection:</b>	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***

<b>Reference Range:</b>	Age-dependant reference ranges will be provided. The immunophenotypic abnormalities associated with ALPS include TCR $\alpha\beta$ 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.
<b>Critical Values:</b>	N/A
<b>Limitations:</b>	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.
<b>Methodology:</b>	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.
<b>References:</b>	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.