## Lab Dept: Flow and Immunology

## Test Name: ACTIVATED T-CELL PANEL

### *General Information*

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| **Lab Order Codes:** | ATCP |
| **Synonyms:** | Helper/Suppressor Ratio; T- cells; T, B, and/or NK phenotyping; T, B, and/or NK enumeration; T&B subsets; Activated T-cells; CD38; HLA-DR |
| **CPT Codes:** | 86359 – T cells, total count<br><br>86360 – T cells; absolute CD4 and CD8 count, including ratio<br><br>88184 – Flow cytometry; cytoplasmic or nuclear marker, technical component only; first marker<br><br>88185 X4 – Flow cytometry, cell surface, cytoplasmic or nuclear marker, technical component; each additional marker |
| **Test Includes:** | CD3, CD4(CD3+), CD8(CD3+), CD8+38+HLA-DR(CD3+), CD16+56(CD3-), and CD19 relative percentages and absolute values. Also includes a calculated Helper/Suppressor ratio and relative percentage of CD8+38+HLA-DR+(CD3+) among CD8(CD3+) cells. |

### *Logistics*

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| **Test indications:** | This test can be useful for characterizing and enumerating lymphocyte subsets and activated T-cells expressing CD38 and HLA-DR activation markers. |
| **Lab Testing Sections:** | Flow Cytometry |
| **Phone Numbers:** | MIN Lab: 612-813-6280<br><br>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:** | N/A |

## *Specimen*

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| **Specimen Type:** | Whole blood |
| **Container:** | Lavender top (EDTA) tube |
| **Draw Volume:** | 2 mL blood in a 2 mL Lavender (EDTA) tube (preferred) |
| **Collection:** | Routine blood collection |
| **Special Processing:** | Lab Staff: Keep specimen at room temperature and forward promptly to the laboratory. **Do Not** centrifuge, refrigerate, or freeze sample. |
| **Patient Preparation:** | N/A |
| **Sample Rejection:** | Specimens will not be processed that are clotted, hemolyzed, greater than 72 hours old, collected in the wrong tube type, or that have been held or handled at a temperature other than room temperature. |

## *Interpretive*

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| **Reference Range:** | Age-dependent reference ranges will be provided with the TBNK portion of this assay. Reference ranges are not established for CD38 and HLA-DR activation markers. |
| **Critical Values:** | N/A |
| **Limitations:** | Poor specimen quality will adversely affect the test results (see Specimen section).<br><br>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. The flow cytometric analysis is based on a CD45 gating strategy. The calculation of absolute values is based upon the total leukocyte and relative lymphocyte values obtained.<br><br>This test was developed and its performance characteristics determined by Children's Hospitals and Clinics. It has not been cleared or approved by the US Food and Drug Administration. Analyte specific reagents (ASR's) are used in many laboratory tests necessary for standard medical care and generally do not require FDA approval. |

**References:**

Chaturvedi, V., Marsh, R. A., Zoref-Lorenz, A., Owsley, E., Chaturvedi, V., Nguyen, T. C., ... & Jordan, M. B. (2021). T-cell activation profiles distinguish hemophagocytic lymphohistiocytosis and early sepsis. Blood, 137(17), 2337-2346.

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

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