

Cytek® cFluor® Human Pan Leukocyte Kit, LNW

Comprehensive and complete enumeration of leukocytes

A white blood cell (WBC) differential is routinely performed as a general health check and may be used to determine the cause of an abnormal WBC count. It may also be used as an aid in diagnosing and monitoring conditions that alter the immune response, such as inflammation, infection, allergy, heavy metal toxicity, immune disorders, or hematologic cancers. Typically, a WBC differential is performed on an automated blood analyzer. However, in recent years, flow cytometry testing has been utilized to enumerate leukocytes in translational research. In addition to the populations identified by the conventional WBC differential, flow cytometry assays provide a more comprehensive and complete enumeration of leukocytes such as T cell, B cell, NK cell, stem cell populations, as well as classical, intermediate, and nonclassical monocytes. This makes it a useful tool for studying immune responses and immune toxicity in therapy development and clinical trials.

With the advent of high parameter flow cytometry, and specifically spectral flow cytometry, the ability to simultaneously enumerate more subsets of leukocytes in a single tube has become available. Cytek has developed the cFluor Human Pan Leukocyte Kit to help researchers to identify and enumerate leukocyte subsets in drug discovery and development, as well as other research needs. This kit has been designed to fully enumerate all major leukocyte subsets and it mirrors and expands on those identified in a traditional complete WBC differential. The kit has been optimized to be used on whole blood as a lyse no wash assay which, in tandem with a complete blood count (CBC), allows accurate dual platform absolute cell counts. Furthermore, the kit has been designed and validated to allow for the sequential identification of populations providing easy and highly reproducible gating for consistent results. Allowing for necessary expansion as a backbone panel, this kit could further identify any populations of interest, as well as the functional or activation/exhaustion status of a particular population.

Violet			Blue			Red		
Specificity	Clone	Fluorochrome	Specificity	Clone	Fluorochrome	Specificity	Clone	Fluorochrome
CD8	SK1	cFluor® V450	CD16	3G8	cFluor® B515	CD7	CD7-6B7	cFluor® R659
HLA-DR	L243	cFluor® V505	CD34	4H11	cFluor® BYG575	CD20	2H7	cFluor® R685
CD45	HI30	cFluor® V547	CD123	6H6	cFluor® BYG610	CD66b	G10F5	cFluor® R720
CD4	SK3	cFluor® V610	CD193 (CCR3)	5E8	cFluor® BYG667	CD3	SK7	cFluor® R780
			CD56	LT56	cFluor® BYG710			
			CD19	H1B19	cFluor® BYG750			
			CD14	MEM-15	cFluor® BYG781			

Table 1: Cytek cFluor Human Pan Leukocyte Kit (P/N R7-40007) composition.

The pre-optimized cFluor Human Pan Leukocyte Kit takes away the need for time consuming, labor intensive and costly panel design and optimization. This kit consists of 15 single vial cFluor reagents, allowing for a complete enumeration of human leukocyte subsets. Cytek also provides the following tools to streamline the laboratory workflow:

- Complete protocols for sample preparation, staining, and acquisition
- Experiment and analysis templates to streamline workflow and improve laboratory efficiency

The cFluor Human Pan Leukocyte Kit has been tested and shown to be compatible with blood samples collected in EDTA, Heparin, and ACD blood collection tubes. This provides more flexibility to your research projects.

Data

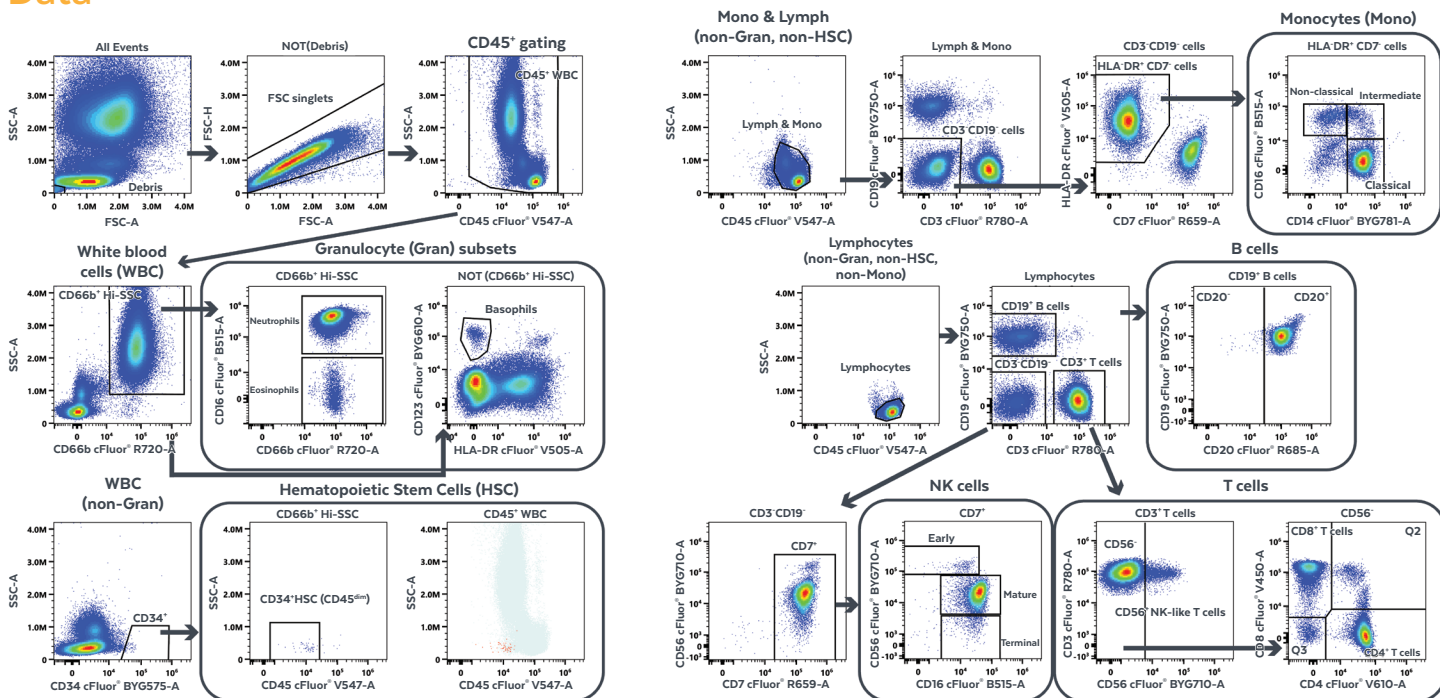


Figure 1. Cell gating strategy for identifying leukocyte subsets using the Cytek cFluor Human Pan Leukocyte Kit. Data was generated using whole blood collected in an EDTA tube from a healthy donor. Sequential gates of total cells, singlets, CD45⁺ white blood cells (WBC) are used to get total leukocyte population. CD66b⁺ WBCs are selected for identifying neutrophils (CD16⁺) and eosinophils (CD16⁺). Basophils (CD123⁺HLA-DR⁺) are identified in non-CD66b⁺ population. CD34⁺CD45^{dim} hematopoietic stem cells (HSC) are identified after excluding granulocytes (Gran) subsets in WBC. Monocytes (Mono) are selected and identified by expression of CD14 and/or CD16 in CD3⁺, CD19⁺, CD7⁺, HLA-DR⁺ population in non-Gran and non-HSC population. Mono subsets are classified as classical Mono (CD14⁺CD16^{dim}), intermediate Mono (CD14⁺CD16⁺), non-classical Mono (CD14^{dim}CD16⁺). Total lymphocytes (Lymph) are gated after excluding Gran, HSC, and Mono subsets. CD3⁺ T cells and CD19⁺ B cells are identified in Lymph. T cells are further divided into the CD56⁺ NK-like T cells, and CD4⁺ and CD8⁺ T cells from CD56⁺ T cells. From the CD19⁺ lymphocytes, B cells are sub-populated by CD20 expression. Three subpopulations of NK cells are identified by expression of CD56^{hi} (Early NK), CD56⁺CD16⁺ (Mature NK), and CD56⁺CD16⁺ (Terminal NK) in CD7⁺ CD3⁺ CD19⁺ Lymph.

How to Order

Component	Part Number
Cytek® cFluor® Human Pan Leukocyte Kit, LNW	R7-40007
Cytek® RBC Lyse/Fix Solution 10X	R7-60010
Cytek® FSP™ CompBeads	B7-10011

For Research Use Only. Not for use in diagnostic procedures.

cFluor® V547, cFluor® B515, cFluor® R685 and cFluor® R720 are equivalent to CF⁺405L, CF⁺488A, CF⁺660C and CF⁺700 respectively, manufactured and provided by Biotium, Inc. under an Agreement between Biotium and Cytek (LICENSEE). The manufacture, use, sale, offer for sale, or import of the product is covered by one or more of the patents or pending applications owned or licensed by Biotium. The purchase of this product includes a limited, non-transferable immunity from suit under the foregoing patent claims for using only this amount of product for the purchaser's own internal research. No right under any other patent claim, no right to perform any patented method, and no right to perform commercial services of any kind, including without limitation reporting the results of purchaser's activities for a fee or other commercial consideration, is conveyed expressly, by implication, or by estoppel.

cFluor® BYG610, cFluor® BYG667, cFluor® BYG710, cFluor® BYG750, and cFluor® BYG781 are a tandem dyes made with R-PE. cFluor® R780 is a tandem dye made with APC. Caution - Tandem dyes may show changes in their emission spectra with prolonged exposure to light or fixatives.

Cytek® FSP™ CompBeads are developed and manufactured by Slingshot Biosciences, Inc., Emeryville, CA.

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