Cytek cFluor™ Immunoprofiling Kit

PRODUCT DETAILS	
Catalog number:	R7-40000 (25 Tests)
Category:	Immunophenotyping
Format:	cFluor conjugated antibodies in individual tubes

Target	Clone	Fluorochrome	Item number
CD3	SK7	cFluor V420	R7-20054
CD4	SK3	cFluor R780[1]	R7-20084
CD8	SK1	cFluor B515[4]	R7-20036
CD14	M5E2	cFluor V450	R7-20004
CD16	3G8	cFluor R668[4]	R7-20070
CD19	HIB19	cFluor BYG710	R7-20010
CD25	BC96	cFluor BYG781[3]	R7-20080
CD27	QA17A18	cFluor R840[2]	R7-20082
CD45	HI30	cFluor V547[4]	R7-20012
CD45RA	HI100	cFluor B690	R7-20086
CD56	5.1H11	cFluor R720[4]	R7-20090
CD127	A019D5	cFluor R659[3]	R7-20078
CD197 (CCR7)	G043H7	cFluor BYG575[3]	R7-20076
IgD	IA6-2	cFluor BYG667[3]	R7-20088

Test Dilution:	5µl per test
Application:	Flow cytometry
Formulation:	Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide and 0.2% BSA
Storage:	2-8°C and protected from light. **Do not freeze**

PRODUCT DESCRIPTION

Cytek cFluor Immunoprofiling Kit allow for the identification of helper T cells, cytotoxic T cells, B cells, NK cells and monocytes in human peripheral blood mononuclear cells and in whole blood. The reagents in this kit help to distinguish different subsets of T, B and NK cells; including regulatory T cells, naïve T cells, activated T cells, memory T cells, effector T cells, naïve B cell, memory B cells, nonclassical and classical monocytes.

CD3 is expressed on all mature T cells, NK T cells, and some thymocytes. CD3, a part of the CD3/T cell receptor complex, plays a role in antigen recognition, signal transduction, and T cell activation.

CD4, is expressed on most thymocytes, a major subset of T cells, and on monocytes/macrophages. Functionally, CD4 is associated with thymic differentiation, in conjunction with MHC class II molecules in antigen recognition and with signal transduction.

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CD8 is found on thymocytes, on a subset of T cells and on NK cells. This molecule acts as a co-receptor in MHC class I molecules in antigen recognition, has a role in T cell activation and in thymic differentiation.

CD14 is also known as a high affinity LPS receptor and is highly expressed on monocytes and macrophages. It is also expressed on granulocytes, but at a lower level. In addition, CD14 is found on interfollicular dendritic cells, reticular dendritic cells, and Langerhans cells.

CD16 is expressed on NK cells, monocytes and macrophages in the form of CD16a. Another form of CD16, CD16b is expressed on neutrophils. CD16 engagement of IgG leads to NK cell activation, antibody-dependent cell-mediated cytotoxicity (ADCC) and phagocytosis

CD19 is expressed in the B cell lineage, from pro-B to blastoid B cells. However, it is absent on plasma cells. It is also expressed on follicular dendritic cells. CD19 is involved in B cell development, activation, and differentiation.

CD25 is a low affinity IL-2 receptor that is expressed on progenitor lymphocytes, activated T & B cells, and monocytes, as well as on regulatory T cells. When CD25 is in association with CD122, IL-2 receptor beta chain and with CD132, the common gamma chain, the resulting complex is the high-affinity IL-2 receptor. IL-2 receptor signaling is key lymphocyte proliferation and survival.

CD27 is a lymphocyte specific member of the TNF receptor superfamily. CD27 is expressed on a subset of thymocytes, mature T cells. The expression further upregulated in T cell activation. Subpopulations of B cells and NK also express CD27. In T cell-B cell interaction, CD27 binds to CD70 to provide costimulation to result in T cell activation and B cell differentiation and proliferation.

CD45 is expressed on all hematopoietic cells, except erythrocytes and platelets. CD45 is a signaling molecule that is involved in cellular proliferation, differentiation and in regulation of immune cell functions.

CD45RA is an isoform of CD45 due to alternate splicing. CD45RA is expressed on naïve or resting CD4+ and CD8+ T cells, as well as on B cells and monocytes.

CD56, within the hematopoietic system is expressed on NK cells and NKT cells, a subset of T cells. In the nervous system, CD56 is expressed by neurons and plays a role in the homotypic adhesion of neural cells.

CD127, when it heterodimerizes with the common gamma chain (CD132) forms the IL-7 receptor. This receptor is involved in the development of B cells in the bone marrow, and the control of T cell proliferation in the periphery. CD127 expression is downregulated in regulatory T cells.

CD197 (CCR7) is a chemokine receptor for chemokines CCL19 and CCL21. CCR7 and its ligands are involved in trafficking and migration of immune cells into immunological milieus. For example, B cell migration and organization into secondary lymphoid tissues, and migration of memory T cells into inflamed tissue. CCR7 is expressed on T cells and the detection of CCR7, in combination with CD45RA, can be used to distinguish naive T cells from central and effector memory T cells.

IgD is a molecule that is expressed on naive B cells. IgD is expressed in B cell upon exiting the bone marrow to the periphery.

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RECOMMENDED USAGE

Human peripheral mononuclear cells (PBMC) or whole blood have been tested to validate the performance of this kit. For staining procedures, product data, and gating strategy, please refer to the Reagents and Protocols sections of our website at www.cytekbio.com.

[1] Cytek dye cFluor R780 and its conjugates was developed, manufactured and is commercialized by BioLegend, Inc. under the trademark APC/Fire750™

[2] Cytek dye cFluor R840 and its conjugates was developed, manufactured and is commercialized by BioLegend, Inc. under the trademark APC/Fire810™

[3] Fluor conjugated antibody manufactured and supplied by BioLegend Inc.

[4]cFluor™ V547, cFluor™ B515, cFluor™ B532, cFluor™ R668 and cFluor™ R720 are equivalent to CF®405L, CF®488A, CF®503, CF®647 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.

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Technical Data Sheet

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

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