



Cytek® 24-Color Mouse Immunoprofiling Panel

The Cytek® 24-Color Mouse Immunoprofiling Panel is designed and optimized by Cytek scientists to enable researchers to identify more than 20 mouse immune subpopulations including T, B, NK cells, dendritic cells, monocytes, and granulocyte populations in fresh mouse samples.

The 24-Color Mouse Immunoprofiling Panel has been optimized and titrated for analyzing fresh spleen, bone marrow, lymph node and blood samples on the Cytek Northern Lights™ or Cytek Aurora™ systems equipped with violet, blue, and red lasers.

Product details for Cytex® 24-Color Mouse Immunoprofiling panel, cFluor® Reagent Kit (22C)

Catalog number: R7-40014 (25 Tests)

Category: Immunophenotyping

Format: cFluor® conjugated antibodies in individual vials

Target	Clone	Fluorochrome
XCR1	ZET	cFluor® V435*
CD11c	N418	cFluor® V450
NK1.1/CD161	PK136	cFluor® V505
CD45	30-F11	cFluor® V547 ¹
CD8	53-6.7	cFluor® V605*
B220/CD45R	RA3-6B2	cFluor® V670*
CD4	RM4-5	cFluor® V780*
CD3	17A2	cFluor® B515 ¹
CD19	1D3	cFluor® B532 ¹
Ly6G	1A8	cFluor® B548 ¹
CD64	X54-5/7.1	cFluor® BYG575
F4/80	BM8.1	cFluor® BYG610 ^{1,2}
TCR beta	H57-597	cFluor® BYG645 ²
CD317	927	cFluor® BYG667 ²
CD49b	HMa2	cFluor® BYG710 ²
I-A/I-E	M5/114.15.2	cFluor® BYG750 ²
CD62L	MEL-14	cFluor® BYG781 ²
CD25	PC61	cFluor® R659
CD11b	M1/70	cFluor® R685 ¹
CD44	IM7	cFluor® R720 ¹
TCR g/d	GL3	cFluor® R780 ²
Ly6C	HK1.4	cFluor® R840 ^{1,2}

Test Dilution: 5µL per test

Application: Flow cytometry

Formulation: Phosphate-buffered saline, pH 7.2, containing 0.09% sodium azide and 0.2% BSA (BSA Country of Origin USA)
*For Starbright Dyes: Phosphate-buffered saline, pH 7.2, containing 0.1% PEG 3350, 0.1% Pluronic F-68, 0.05% Tween-20, 0.09% sodium azide and 1% BSA (BSA Country of Origin USA)

Storage: 2-8°C and protected from light.

Do not freeze

Product details for Cytex 24-Color Mouse Immunoprofiling panel, 2 Color (Brilliant Violet™, eBioscience™)				
Catalog number: 407-1702-80 and 414-5751-80				
Category: Immunophenotyping				
Format:	Target	Clone	Fluorochrome	
	CD170 (Siglec F)	1RNM44N	Brilliant Violet™ 711	
	MERTK	DS5MMER	Brilliant Violet™ 480	
Test Dilution: 1µL per test				
Application: Flow cytometry				

PRODUCT DESCRIPTION

The Cytex 24-Color Mouse Immunoprofiling Panel allows for the identification and characterization of multiple lineage subsets within mouse tissue suspensions including T, B, NK cells, dendritic cells, monocytes, and granulocyte populations in fresh mouse samples. The kit has been evaluated in fresh mouse splenocyte, bone marrow, lymph node and blood samples.

CD3 is expressed on T cells, thymocytes and NK-T cells. CD3 plays a critical role in TCR signal transduction, T cell activation, and antigen recognition by binding the peptide/MHC antigen complex.

CD4 is typically expressed by thymocytes, certain mature T cell populations such as Th17 and T regulatory (Treg) cells, and dendritic cells.

CD8a is expressed on cytotoxic T cells, thymocytes, as well as on certain cell types that do not express the TCR, including some NK cells and lymphoid dendritic cells.

CD11b is expressed in monocytes, granulocytes, macrophages, microglia, dendritic cells (myeloid derived), and NK cells.

CD11c is expressed on dendritic cells, intestinal intraepithelial lymphocytes (IEL), and some NK cells, T and B cell subsets. It is also highly expressed in tissue macrophages.

CD19 is a lineage-differentiation marker, as its expression is detectable at the earliest B cell stages, through development, and is finally lost upon transition to mature plasma cells.

CD25 expression varies during developmental stages of T and B cells, is induced on activated mature T and B cells, and is present on subsets of dendritic cells. CD25 signaling as part of the IL-2 receptor complex triggers T cell activation and proliferation, as well as modulating the differentiation and function of Th17 cells, T regulatory (Treg) cells, and dendritic cells.

CD44 is expressed by a variety of hematopoietic and non-hematopoietic cells. In conjunction with CD62L, it is commonly used to discriminate memory and naïve cell subsets of T cells.

CD45 is expressed on all leukocytes and is one of the most abundant hematopoietic markers. CD45 is critical for many leucocyte functions, regulating signal transduction and cell activation associated with the T cell receptor, B cell receptor, and IL-2 receptor.

B220/CD45R is expressed on B lymphocytes throughout development in addition to a small subset of dendritic cells (plasmacytoid dendritic cells).

CD49b is expressed by platelets, intestinal epithelial cells, NK cells, epithelial cells, and a subset of CD4⁺ T cells. CD49b plays an essential role in mediating the adhesion of cells to the extracellular matrix.

CD62L, also known as L-Selectin, is a cell adhesion molecule that assists to mediate leukocyte-endothelial interactions. L-Selectin is characteristically expressed by neutrophils, and is also found on B cells, monocytes, granulocytes, and at varying levels on naïve, effector and memory T cells. It rapidly sheds upon cell activation, releasing into the circulation a soluble form whose biological role is of interest in cancer biology research. The MEL-14 antibody may be used as a phenotypic marker for CD62L expression on various immune cell types.

CD64 is a member of the immunoglobulin superfamily and is expressed on monocytes/macrophages, dendritic cells, and mast cells. The X54-5/7.1 antibody reacts with mouse strains carrying CD64a and b alleles but not CD64d.

NK1.1/CD161 is prominently expressed on natural killer (NK) cells and is correlated with NK cytotoxic effects toward virus-infected cells and tumor cells. NK1.1 is expressed on subsets of NKT cells in certain mouse strains (C57BL/6, FVB/N, and NZB), yet absent from others (AKR, BALB/c, CBA/J, C3H, DBA/1, DBA/2, NOD, SJL, and 129).

CD317 is a type II transmembrane glycoprotein with a molecular mass of 29-33 kD. It is predominantly expressed on Type I interferon-producing cells (IPCs) in naïve mice but is up-regulated on most cell types following stimulation with type I interferons and interferon-gamma. It is highly expressed on terminally differentiated normal plasmacytoid dendritic cells and on some tumor cells, such as multiple myeloma, renal cell carcinoma, and melanoma cells.

F4/80 is differentially expressed during myeloid cell development and may be regulated by certain cytokines within the tissue microenvironment. Other cell types shown to express this antigen include Langerhans cells, Kupffer cells and dendritic cell subsets. BM8.1 is widely used together with antibodies to CD115 (c-fms), CD11b and CD11c to identify myeloid / macrophage cells by flow cytometry.

I-A/I-E The M5/114.15.2 monoclonal antibody binds to mouse MHC Class II alloantigens I-A^b, I-A^d, I-A^q, I-E^d, and I-E^k, as well as being cross-reactive with mouse cells of H-2^p and H-2^r haplotypes. MHC Class II is widely expressed by mouse immune cells bearing these alloantigens, including T and B cells, monocytes, macrophages, and dendritic cells.

Ly-6C is expressed on monocyte/macrophage cells, endothelial cells, granulocytes, and a subset of lymphocytes. Mice strains with the Ly-6.2 alloantigen have subsets of both Ly-6C positive CD4 and CD8 cells while Ly-6.1 expressing strains have only the CD8 Ly-6C positive subset.

Ly6G is differentially expressed during development and maturation of cells in the myeloid lineage and is expressed at varying stages and levels on monocytes, macrophages, granulocytes, and peripheral neutrophils. In the mouse, the 1A8 antibody is typically used with the macrophage labeling antibody M1/70 (Anti-CD11b) for phenotypic analysis of monocytes, macrophages, and granulocytes.

TCR γ/δ belongs to the immunoglobulin superfamily, which is involved in the recognition of certain bacterial and tumor antigens bound to MHC class I. TCR γ/δ associates with CD3 and is expressed on a T cell subset found in the thymus, the intestinal epithelium, the peripheral lymphoid tissues, and the peritoneum.

TCR beta combines with a second protein chain (alpha chain) to form the alpha-beta TCR that is expressed by NK1.1+ thymocytes, NKT cells, and most peripheral T cells. These receptors participate in a complex with CD3, and with the co-receptors CD4 or CD8, to recognize and respond to antigens bound to MHC molecules on antigen-presenting cells. The H57-597 antibody is used as a phenotypic marker for T cells expressing the alpha-beta TCR.

XCR1 identifies a subset of conventional dendritic cells (cDC1) that express CD8a.

REFERENCES

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RECOMMENDED USAGE

Fresh mouse splenocytes, bone marrow, lymph node and blood samples have been tested to optimize the performance of this kit. Please refer to the product web page for the staining protocols, fluorochrome list, experiment template and data acquisition protocol.

Please briefly centrifuge the reagent vial before use.

Use appropriate personal protective equipment per the product safety data sheet when using this product.

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

¹cFluor® V547, cFluor® B515, cFluor® B532, cFluor® B548, cFluor® BYG610, cFluor® BYG645, cFluor® R685, cFluor® R720 and cFluor® R840 are equivalent to CF®405L, CF®488A, CF®503R, CF®514, RPE-CF®596R, cFluor® BYG610, CF®660C, CF®700 and APC-CF®790T 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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²cFluor® BYG610, cFluor® BYG645, cFluor® BYG667, cFluor® BYG710, cFluor® BYG750, and cFluor® BYG781 are tandem dyes made with R-PE. cFluor® R780 and cFluor® R840 are tandem dyes made with APC. Caution – Tandem dyes may show changes in their emission spectra with prolonged exposure to light or fixatives.

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