



Cytek® 20-Color AML Panel

The Cytek 20-Color AML Panel is designed and optimized by Cytek scientists to identify and characterize normal and aberrant cells in normal and AML samples. It is also useful for minimal residual disease evaluation.

The 20-Color AML Panel has been optimized and titrated for analyzing human fresh and frozen bone marrow samples on Cytek's Northern Lights™ or Aurora systems equipped with violet, blue, and red lasers.

Product details for Cytex 20-Color AML panel, cFluor® Reagent Kit (19C)			
Catalog number: R7-40009 (25 Tests)			
Category: Immunophenotyping			
Format: cFluor® conjugated antibodies in individual tubes			
	Target	Clone	Fluorochrome
	CD16	3G8	cFluor® V420
	CD14	MEM-18	cFluor® V450
	HLA-DR	L243	cFluor® V505
	CD4	SK3	cFluor® V547 ¹
	CD11b	ICRF44	cFluor® V610
	CD7	CD7-6B7	cFluor® B515 ¹
	CD15	HI98	cFluor® B548 ¹
	CD38	HB-7	cFluor® B690 ²
	CD34	4H11	cFluor® BYG575
	CD33	WM53	cFluor® BYG610 ^{1,2}
	CD71	OKT9	cFluor® BYG667 ²
	CD117	104D2	cFluor® BYG710 ²
	CD56	LT56	cFluor® BYG750 ²
	CD10	HI10a	cFluor® BYG781 ²
	CD13	WM15	cFluor® R659
	CD5	L17F12	cFluor® R685 ¹
	CD123	6H6	cFluor® R720 ¹
	CD64	10.1	cFluor® R780 ²
	CD45	HI30	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)			
Storage: 2-8°C and protected from light. Do not freeze			

PRODUCT DETAILS for Cytex 20-Color AML panel, 1 Color (Super Bright™, eBioscience™)			
Catalog number: 78-0198-42 (100 Tests)			
Category: Immunophenotyping			
Format:	Target	Clone	Fluorochrome
	CD19	SJ25C1	Super Bright™ 780
Test Dilution: 5µL per test			
Application: Flow cytometry			

PRODUCT DESCRIPTION

Cytek 20-Color AML Panel allows for AML testing, including identifying and characterizing normal and aberrant cells, immunophenotypic classification and minimal residual disease evaluation in human fresh and frozen bone marrow samples.

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.

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.

HLA-DR is present on the surface of antigen-presenting cells, including B cells, dendritic cells, macrophages, monocytes and activated T cells. It is also expressed on early stage of myeloid cells in bone marrow. MHC class II regulates the immune system by playing a critical role in binding and presenting antigen-derived peptides to peptide-MHC II-specific CD4 T cells.

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.

CD11b associated with integrin beta2 (CD18) is expressed on the surface of granulocytes, monocytes/macrophages, dendritic cells, NK cells, and subsets of T and B cells. CD11b/CD18 is critical for the trans-endothelial migration of monocytes and neutrophils. It is also involved in granulocyte adhesion, phagocytosis, and neutrophil activation.

CD7, also known as GP40, is found on T cells, NK cells, thymocytes, and pre-B cells. CD7 is called T cell leukemia antigen for its expression on acute lymphocytic leukemia and some acute myeloid leukemia. Studies show that cross-linking of CD7 significantly increases CD7-associated PI3-kinase activity, suggesting the antigen's functional role in inducing calcium flux in T lymphocytes, and T and NK cell activation.

CD15 is highly expressed on granulocytes, including neutrophils and eosinophils, and some on monocytes. It is absent from lymphocytes or basophils. CD15, a marker for human myeloid cell, is involved in various cell functions including phagocytosis, bacterial activity, neutrophil adhesion to dendritic cells and chemotaxis.

CD38 is expressed on most leukocytes and has a dual role as a receptor and enzyme. As a receptor, CD38 is involved in cell adhesion and signal transduction. As an enzyme, CD38 metabolizes extracellular NAD⁺ to regulate extracellular nucleotide homeostasis. CD38 is highly expressed on plasma cells and multiple myeloma cells.

CD34 is expressed on hematopoietic progenitor cells, some populations of mesenchymal stem cells, and vascular endothelium. Various epitopes of CD34 have been defined based on their differential sensitivity to enzymatic cleavage. By these criteria, the 4H11 antibody belongs to class III, indicating that it reacts with a protein epitope. Additionally, CD34 may also function as an adhesion molecule with a role in mediating attachment of stem cells to bone marrow extracellular matrix, stromal cells, or other bone marrow components.

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CD33, also known as Siglec-3, gp67, and p67, is expressed on monocytes, activated T cells, myeloid progenitors, granulocytes, dendritic cells, and mast cells. It is absent on erythrocytes, platelets, and lymphoid cells. CD33 binds to sialic acids to act as a sialic acid-dependent cell adhesion molecule. It also contains intracellular tyrosine-based inhibition motifs (ITIMs), suggesting its function to inhibit cellular activity.

CD71, the transferrin receptor, exists as a homodimer on the cell surface and is essential for cellular growth. CD71 is expressed on early thymocytes as well as activated lymphocytes, monocytes, macrophages, brain endothelium, and most proliferating cells. The transferrin receptor is also present on early erythroid cells but is lost as reticulocytes differentiate into mature erythrocytes.

CD117 is a protein tyrosine kinase also known as c-Kit. It is a receptor for stem cell factor or c-Kit ligand. CD117 is expressed on pluripotent hematopoietic progenitor cells (approximately 1-4% bone marrow cells), mast cells, and certain types of AML cells.

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.

CD10 is a type II transmembrane protein also known as common acute lymphoblastic leukemia antigen (CALLA), enkephalinase, and neprilysin. CD10 is expressed on B cell precursors, T cell precursors, and neutrophils.

CD13 is a type II transmembrane glycoprotein also known as aminopeptidase N, APN, and gp150. This zinc metallopeptidase is expressed as a homodimer on granulocytes, myeloid progenitors, endothelial cells, epithelial cells and subset of granular lymphoid cells. It is not expressed on platelets or erythrocytes.

CD5, also known as Leu-1, Ly-1 or T1, is expressed on thymocytes, T cells and subsets of B cells. CD5 binds to its ligand on B cells, CD72 (LYB-2), to play a role in T-B cell interaction and to modulate the intensity of antigen receptor signal transduction.

The CD123 molecule is expressed predominantly on hematopoietic progenitor cells, macrophages, dendritic cells, basophils, eosinophils, monocytes, megakaryocytes, and some B cells. It is also present in myeloid, lymphoid, and vascular endothelial cells.

CD64 is a type I transmembrane glycoprotein that is a high affinity receptor for human IgG (FcγRI), especially the IgG1 and IgG3 subclasses. CD64 is expressed on monocytes, macrophages, dendritic cells, granulocytes activated with interferon-gamma and early myeloid lineage cells.

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.

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.

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RECOMMENDED USAGE

Human fresh and frozen bone marrow samples have been tested to validate 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.

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