Reagents, Kits & Other Products

19 Overview Tables
24 Primary Single-Color Reagents
32 MultiMix™ Dual-Color Reagents
34 MultiMix™ Triple-Color Reagents
35 FITC/RPE/APC Reagent Line
40 FITC/RPE/RPE-Cy5 Reagent Line
42 Isotype Reagents
42 Single-Color Isotype Reagents
42 MultiMix™ Dual-Color Isotype Reagents
43 MultiMix™ Triple-Color Isotype Reagents
FITC/RPE/APC Reagent Line
43 MultiMix™ Triple-Color Isotype Reagents
FITC/RPE/RPE-Cy5 Reagent Line
44 Secondary Antibody Conjugates and Streptavidin Conjugates
44 Apoptosis Kit
45 CD34+ Cells, Enumeration Kit and Count Kit
45 Telomere PNA Kit
46 Lysing, Fixation and Permeabilization Reagents
46 Quantitative Analysis
47 Calibration Beads
47 Unconjugated Control Reagents

Overview, Primary Single-Color Reagents

Antibody Description		Available Form/Code						
Anti-Human	**Clone**	**APC**	**CY**	**FITC**	**PB**	**PerCP**	**RPE**	**RPE-Cy5**
B Cell	FMC7			F7110				
BCL2 Oncoprotein	124			F7053				
Bromodeoxyuridine	Bu20a			F7210				
CD1a	NA1/34			F7141			R7189	
CD2	MT910			F0767			R0807	
CD3	UCHT1	C7225	CA696	F0818	PB982	PR702	R0810	C7067
CD4	MT310	C7226		F0766	PB983		R0805	C7069
CD5	DK23	C7242		F0795			R0842	
CD7	CBC.37			F7276			R7277	
CD7	DK24			F0789				
CD8	DK25	C7227		F0765	PB984		R0806	C7079
CD10	SS2/36			F0826			R0848	
CD11b	2LPM19c						R0841	
CD11c	KB90			F0713				
CD13	WM-47			F0831			R0715	
CD14	TÜK4			F0844			R0864	
CD15	C3D-1			F0830				
CD16	DJ130c			F7011			R7012	
CD19	HD37	C7224		F0768	PB985		R0808	C7066
CD20	B-Ly1			F0799			R7013	C7132
CD22	4KB128	C7281		F7060			R7061	
CD23	MHM6			F7062			R7108	
CD24	SN3			F7134				
CD25	ACT-1			F0801			R0811	
CD27	M-T271			F7178			R7179	
CD28	CD28.1			F7163			R7164	
CD30	Ber-H2			F0849				
CD33	WM-54			F0832			R0745	
CD34 Class III	BIRMA-K3	C7238		F7081			R7125	
CD38	AT13/5			F7101			R7144	
CD41	5B12			F7088			R7058	
CD42b	AN51						R7014	
CD43	DF-T1			F7102				
CD45	2D1					PR701		
CD45	T29/33	C7230	CA697	F0861	PB986		R7087	C7099
CD45R0	UCHL1			F0800			R0843	
CD45RA	4KB5						R7086	
CD54	6.5B5			F7143				
CD56	C5.9						R7251	
CD56	MOC-1						R7127	
CD57	TB01			F7270				
CD61	Y2/51	C7280		F0803				
CD64	10.1	C7278					R7219	
CD66abce	Kat4c			F7112				
CD68	KP1			F7135				
CD69	FN50			F7172			R7173	
CD71	Ber-T9			F0829				
CD79αcy	HM57	C7252					R7159	
CD79β	SN8			F7137			R7272	
CD86	BU63			F7205				
CD90	5E10			F7274			R7275	
CD95	DX2						R7154	
CD103	Ber-ACT8			F7138			R7188	
CD117	104D2	C7244					R7145	
CD138	MI15	C7256					R7229	
CD235a	JC159			F0870			R7078	
Epithelial Antigen	Ber-EP4			F0860				

Overview, Primary Single-Color Reagents (continued)

Antibody Description		Available Form/Code				
Anti-Human	**Clone**	**APC**	**FITC**	**PB**	**PerCP**	**RPE**
HLA-ABC Antigen	W6/32					R7000
HLA-DP, DQ, DR Antigen	CR3/43		F0817			
HLA-DR Antigen	AB3		F7266			R7267
IgA*	Polyclonal Rabbit		F0057			
IgD*	Polyclonal Rabbit		F0059			R5112
IgG*	Polyclonal Rabbit		F0056			
IgM*	Polyclonal Rabbit		F0058			R5111
Kappa Light Chains*	Polyclonal Rabbit	C0222	F0434			R0436
Ki-67 Antigen	Ki-67		F0788			
Ki-67 Antigen	MIB-1		F7268			
Lactoferrin	Polyclonal Rabbit		F0395			
Lambda Light Chains*	Polyclonal Rabbit		F0435			R0437
Lysozyme	Polyclonal Rabbit		F0372			
Myeloperoxidase	MPO-7	C7246	F0714			R7209
Plasma Cell	VS38c		F7149			
Terminal Deoxynucleotidyl Transferase	HT-6		F7139			

* $F(ab')_2$ fragment of affinity-isolated antibody

Overview, MultiMix™ Dual-Color Reagents

Anti-Human	Clones	Code
CD2/FITC	MT910	FR894
CD19/RPE	HD37	
CD3/FITC	UCHT1	FR875
CD4/RPE	MT310	
CD3/FITC	UCHT1	FR881
CD8/RPE	DK25	
CD3/FITC	UCHT1	FR866
CD19/RPE	HD37	
CD3/FITC	UCHT1	FR912
CD56/RPE	C5.9	
CD4/FITC	MT310	FR868
CD8/RPE	DK25	
CD5/FITC	DK23	FR882
CD19/RPE	HD37	
CD5/FITC	DK23	FR729
CD20/RPE	B-Ly1	

Anti-Human	Clones	Code
CD10/FITC	SS2/36	FR883
CD19/RPE	HD37	
CD45/FITC	T29/33	FR700
CD14/RPE	TÜK4	
HLA-DP, DQ, DR Antigen/ FITC	CR3/43	FR867
CD3/RPE	UCHT1	
Kappa Light Chains/ FITC*	Polyclonal Rabbit	FR048
CD19/RPE	HD37	
Kappa Light Chains/ FITC*	Polyclonal Rabbit	FR481
Lambda Light Chains/RPE*	Polyclonal Rabbit	
Lambda Light Chains/FITC*	Polyclonal Rabbit	FR044
CD19/RPE	HD37	

* $F(ab')_2$ fragment of affinity-isolated antibody

Overview, MultiMix™ Triple-Color Reagents

FITC/RPE/APC Reagent Line

Anti-Human	Clones	Code
B Cell (FMC7)/FITC	FMC7	TC683
CD23/RPE	MHM6	
CD19/APC	HD37	
CD1a/FITC	NA1/34	TC681
CD7/RPE	CBC.37	
CD3/APC	UCHT1	
CD2/FITC	MT910	TC677
CD7/RPE	CBC.37	
CD3/APC	UCHT1	
CD2/FITC	MT910	TC666
CD34 Class III/RPE	BIRMA-K3	
CD5/APC	DK23	
CD3/FITC	UCHT1	TC690
CD19/RPE	HD37	
CD45/APC	2D1	
CD5/FITC	DK23	TC664
CD10/RPE	SS2/36	
CD19/APC	HD37	
CD8/FITC	DK25	TC660
CD4/RPE	MT310	
CD3/APC	UCHT1	
CD13/FITC	WM-47	TC685
HLA-DR Antigen/RPE	AB3	
CD117/APC	104D2	
CD15/FITC	C3D-1	TC688
CD34/RPE	BIRMA-K3	
CD64/APC	10.1	
CD16/FITC	DJ130c	TC661
CD56/RPE	C5.9	
CD3/APC	UCHT1	
CD19/FITC	HD37	TC676
CD10/RPE	SS2/36	
CD45/APC	2D1	
CD19/FITC	HD37	TC689
CD34/RPE	BIRMA-K3	
CD22/APC	4KB128	
CD19/FITC	HD37	TC672
CD34/RPE	BIRMA-K3	
CD45/APC	2D1	
CD19/FITC	HD37	TC662
CD56/RPE	C5.9	
CD3/APC	UCHT1	
CD19/FITC	HD37	TC669
Lambda Light Chains/RPE*	Polyclonal Rabbit	
Kappa Light Chains/APC*	Polyclonal Rabbit	
CD20/FITC	B-Ly1	TC663
CD5/RPE	DK23	
CD19/APC	HD37	

Anti-Human	Clones	Code
CD33/FITC	WM-54	TC686
CD34/RPE	BIRMA-K3	
CD117/APC	104D2	
CD38/FITC	AT13/5	TC674
CD56/RPE	C5.9	
CD19/APC	HD37	
CD38/FITC	AT13/5	TC671
CD56/RPE	C5.9	
CD45/APC	2D1	
CD41/FITC	5B12	TC687
CD34/RPE	BIRMA-K3	
CD61/APC	Y2/51	
CD43/FITC	DF-T1	TC684
CD79β/RPE	SN8	
CD19/APC	HD37	
CD57/FITC	TB01	TC678
CD7/RPE	CBC.37	
CD3/APC	UCHT1	
CD57/FITC	TB01	TC680
CD8/RPE	DK25	
CD3/APC	UCHT1	
CD57/FITC	TB01	TC679
CD56/RPE	C5.9	
CD3/APC	UCHT1	
CD61/FITC	Y2/51	TC673
CD235a/RPE	JC159	
CD45/APC	2D1	
CD71/FITC	Ber-T9	TC675
CD235a/RPE	JC159	
CD45/APC	2D1	
CD103/FITC	Ber-ACT8	TC665
CD11c/RPE	KB90	
CD19/APC	HD37	
MPO/FITC	MPO-7	TC667
CD79αcy/RPE	HM57	
CD3/APC	UCHT1	
Plasma Cell/FITC	VS38c	TC670
Lambda Light Chains/RPE*	Polyclonal Rabbit	
Kappa Light Chains/APC*	Polyclonal Rabbit	
TdT/FITC	HT-6	TC668
CD22/RPE	4KB128	
CD3/APC	UCHT1	
TdT/FITC	HT-6	TC682
IgM/RPE	Polyclonal Rabbit	
CD79αcy/APC	HM57	

* $F(ab')_2$ fragment of affinity-isolated antibody

Overview, MultiMix™ Triple-Color Reagents (continued)

FITC/RPE/RPE-Cy5 Reagent Line

Anti-Human	Clones	Code
CD3/FITC	UCHT1	TC646
CD4/RPE	MT310	
CD45/RPE-Cy5	T29/33	
CD3/FITC	UCHT1	TC647
CD8/RPE	DK25	
CD45/RPE-Cy5	T29/33	
CD3/FITC	UCHT1	TC649
CD19/RPE	HD37	
CD45/RPE-Cy5	T29/33	
CD4/FITC	MT 310	TC654
CD8/RPE	DK25	
CD3/RPE-Cy5	UCHT1	
CD8/FITC	DK25	TC641
CD4/RPE	MT310	
CD3/RPE-Cy5	UCHT1	
CD13/FITC	WM-47	TC652
CD14/RPE	TÜK4	
CD66abce/RPE-Cy5	Kat4c	
CD16/FITC	DJ130c	TC655
CD19/RPE	HD37	
CD3/RPE-Cy5	UCHT1	
Kappa Light Chains/FITC*	Polyclonal Rabbit	TC051
Lambda Light Chains/RPE*	Polyclonal Rabbit	
CD19/RPE-Cy5	HD37	

* $F(ab')_2$ fragment of affinity-isolated antibody

Overview, Isotype Reagents for Primary Single-Color Reagents

Control Reagent	Available Form/Code						
	APC	CY	FITC	PB	PerCP	RPE	RPE-Cy5
Mouse IgG1	X0968	X7908	X0927	X0987	X7909	X0928	X0955
Mouse IgG2a			X0933			X0950	
Mouse IgG2b			X0941			X0951	
Mouse IgM			X0934				
Rabbit F(ab')$_2$	X0998		X0929			X0930	

Overview, Isotype Reagents for MultiMix™ Dual-Color Reagents

Control Reagent	Code
Mouse IgG1/FITC + Mouse IgG1/RPE	X0932
Mouse IgG1/FITC + Mouse IgG2a/RPE	X0949
Mouse IgG1/FITC + Mouse IgG2b/RPE	X0981
Rabbit F(ab')$_2$/FITC + Mouse IgG1/RPE	X0952
Rabbit F(ab')$_2$/FITC + Rabbit F(ab')$_2$/RPE	X0935

Overview, Isotype Reagents for MultiMix™ Triple-Color Reagents

FITC/RPE/APC Reagent Line

Control Reagent	Code
Mouse IgG1/FITC + Mouse IgG1/RPE + Mouse IgG1/APC	X0978
Mouse IgG1/FITC + Mouse IgG2a/RPE + Mouse IgG1/APC	X7904
Mouse IgG1/FITC + Mouse IgG2b/RPE + Mouse IgG1/APC	X0980
Mouse IgG1/FITC + Rabbit F(ab')$_2$/RPE + Mouse IgG1/APC	X7903
Mouse IgG1/FITC + Rabbit F(ab')$_2$/RPE + Rabbit F(ab')$_2$/APC	X0979
Mouse IgG2a/FITC + Mouse IgG2b/RPE + Mouse IgG1/APC	X7900
Mouse IgM/FITC + Mouse IgG1/RPE + Mouse IgG1/APC	X7902
Mouse IgM/FITC + Mouse IgG2b/RPE + Mouse IgG1/APC	X7901

FITC/RPE/RPE-Cy5 Reagent Line

Control Reagent	Code
Mouse IgG1/FITC + Mouse IgG1/RPE + Anti-Human CD45/RPE-Cy5	X0964
Mouse IgG1/FITC + Mouse IgG1/RPE + Mouse IgG1/RPE-Cy5	X0956
Mouse IgG1/FITC + Mouse IgG2a/RPE + Mouse IgG1/RPE-Cy5	X0965
Rabbit F(ab')$_2$/FITC + Rabbit F(ab')$_2$/RPE + Mouse IgG1/RPE-Cy5	X0957

Primary Single-Color Reagents

Monoclonal Mouse Anti-Human
B Cell

Clone: FMC7
Isotype: IgM, kappa

CE F7110 FITC. Purified 100 tests, 1 mL

The target for this antibody is probably a conformational epitope on CD20. The antibody labels a subpopulation of functionally mature B cells, and together with a panel of other antibodies it is considered essential for the initial evaluation of B-cell chronic lymphoproliferative disorders.

Monoclonal Mouse Anti-Human
BCL2 Oncoprotein

Clone: 124
Isotype: IgG1, kappa

RUO F7053 FITC. Purified 100 tests, 1 mL

Reacts with the BCL2 oncoprotein encoded by a gene involved in the t(14;18) chromosomal translocation. The BCL2 oncoprotein plays a central role in apoptosis (programmed cell death), acting as an inhibitor of the apoptotic process, and it has given name to a family of proteins engaged in the promotion/inhibition of apoptosis (1).

Reference:
1. Chao DT, Korsmeyer SJ. BCL-2 family: regulators of cell death. Annu Rev Immunol 1998;16:395-419.

Monoclonal Mouse Anti-
Bromodeoxyuridine

Clone: Bu20a
Isotype: IgG1, kappa

CE F7210 FITC. Purified 100 tests, 1 mL

Labels cells which have incorporated bromodeoxyuridine into their DNA during the S-phase of the cell cycle. Immunohistochemical labeling with this antibody is a simple and fast method in the study of cell cycle kinetics.

C3bi Receptor

See: CD11b, C3bi Receptor

Monoclonal Mouse Anti-Human
CD1a

Clone: NA1/34
Isotype: IgG2a, kappa

CE F7141 FITC. Purified 100 tests, 1 mL
CE R7189 RPE. Purified 100 tests, 1 mL

The CD1a antigen is a transmembrane α-chain non-covalently associated with β-2-microglobulin. CD1a is expressed by cortical thymocytes and Langerhans' cells in normal, dysplastic and neoplastic tissue.

Monoclonal Mouse Anti-Human
CD2

Clone: MT910
Isotype: IgG1, kappa

CE F0767 FITC. Purified 100 tests, 1 mL
CE R0807 RPE. Purified 100 tests, 1 mL

Reacts with virtually all thymocytes, T lymphocytes and NK cells. CD2 is a valuable pan-T marker for normal and neoplastic T cells.

Monoclonal Mouse Anti-Human
CD3

Clone: UCHT1
Isotype: IgG1, kappa

CE C7225 APC. Purified 100 tests, 1 mL
RUO CA696 Cascade Yellow. Purified 100 tests, 1 mL
CE F0818 FITC. Purified 100 tests, 1 mL
RUO PB982 Pacific Blue. Purified 100 tests, 1 mL
CE PR702 PerCP. Purified NEW 100 tests, 1 mL
CE R0810 RPE. Purified 100 tests, 1 mL
CE C7067 RPE-Cy5. Purified 100 tests, 1 mL

Anti-CD3, UCHT1, reacts with the ε-chain of the CD3 part of the TCR/CD3 complex. The antibody is a pan-T reagent for the detection of normal and neoplastic T cells.

Monoclonal Mouse Anti-Human
CD4

Clone: MT310
Isotype: IgG1, kappa

CE C7226 APC. Purified 100 tests, 1 mL
CE F0766 FITC. Purified 100 tests, 1 mL
RUO PB983 Pacific Blue. Purified 100 tests, 1 mL
CE R0805 RPE. Purified 100 tests, 1 mL
CE C7069 RPE-Cy5. Purified 100 tests, 1 mL

CD4 is a 55 kDa transmembrane glycoprotein expressed by helper/inducer T cells, 55-65% of mature peripheral blood T cells and by thymocyte subsets. CD4 is also expressed by monocytes/macrophages, Langerhans' cells and other dendritic cells. CD4 is not expressed by B cells.

Monoclonal Mouse Anti-Human
CD5

Clone: DK23
Isotype: IgG1, kappa

CE C7242 APC. Purified 100 tests, 1 mL
CE F0795 FITC. Purified 100 tests, 1 mL
CE R0842 RPE. Purified 100 tests, 1 mL

CD5 is a 67 kDa transmembrane glycoprotein. CD5 appears early in thymocyte development and is expressed at low density on thymocytes and at high density on all mature T lymphocytes. CD5 is also expressed on a subpopulation of normal B cells. Antibodies to CD5 are well-suited for detecting normal and neoplastic T and B cells, e.g. in chronic lymphocytic leukemia and centrocytic lymphoma. A review on CD5+ B cells is given in reference 1.

Reference:
1. Hardy RR, Hayakawa K. CD5 B-cells, a fetal B-cell lineage. Adv Immunol 1994;55:297-339.

Monoclonal Mouse Anti-Human
CD7

Clone: CBC.37
Isotype: IgG2b, kappa

CE F7276 FITC. Purified 100 tests, 1 mL
CE R7277 RPE. Purified 100 tests, 1 mL

CD7 is a 40 kDa membrane-bound glycoprotein expressed on thymocytes, mature T cells, a large majority of natural killer cells, pluripotent hematopoietic stem cells, and progenitor cells of lymphoid and myeloid cells. CD7 is the earliest T-cell specific antigen to be expressed by lymphocytes and the only early marker to persist throughout differentiation.
In flow cytometry, F7276 labels CD7+ cells with a higher fluorescence intensity than F0789 and provides a better separation between positive and negative cells.

Monoclonal Mouse Anti-Human
CD7

Clone: DK24
Isotype: IgG2b, kappa

CE F0789 FITC. Purified 100 tests, 1 mL

CD7 is a 40 kDa membrane-bound glycoprotein expressed on thymocytes, mature T cells, a large majority of natural killer cells, pluripotent hematopoietic stem cells, and progenitor cells of lymphoid and myeloid cells. CD7 is the earliest T-cell specific antigen to be expressed by lymphocytes and the only early marker to persist throughout differentiation.

Monoclonal Mouse Anti-Human
CD8

Clone: DK25
Isotype: IgG1, kappa

CE C7227 APC. Purfied 100 tests, 1 mL
CE F0765 FITC. Purfied 100 tests, 1 mL
RUO PB984 Pacific Blue. Purified 100 tests, 1 mL
CE R0806 RPE. Purfied 100 tests, 1 mL
CE C7079 RPE-Cy5. Purfied 100 tests, 1 mL

CD8 is a 68 kDa transmembrane glycoprotein expressed by class I major histocompatibility complex restricted, mature suppressor/cytotoxic T cells, the great majority of cortical thymocytes and approximately 30% of medullary thymocytes. In addition a proportion of γδ T cells and NK cells express CD8.

Monoclonal Mouse Anti-Human
CD10

Clone: SS2/36
Isotype: IgG1, kappa

CE	F0826	FITC. Purified	100 tests, 1 mL
CE	R0848	RPE. Purified	100 tests, 1 mL

CD10 is a 100 kDa transmembrane protein. CD10 is expressed on immature T and B-precursor cells but is lost as the cells reach maturation. In lymphoid malignancies, CD10 is expressed in acute lymphoblastic leukemia (ALL) arising from precursor B cells, but is also observed in a proportion of T-cell ALL. Additionally, it is expressed selectively in mature B-cell leukemia, including multiple myeloma, and in lymphomas.

Monoclonal Mouse Anti-Human
CD11b, C3bi Receptor

Clone: 2LPM19c
Isotype: IgG1, kappa

RUO	R0841	RPE. Purified	100 tests, 1 mL

Reacts specifically with a leucocyte surface receptor (CR3) for the C3bi complement fragment. CD11b is expressed by most granulocytes and monocytes as well as a subpopulation of 'null cell' peripheral lymphocytes containing most of the circulating natural killer cells and by neoplastic cells in myelomonocytic and monocytic leukemia and, less frequently, in acute myeloid leukemia. CD11b (Mac-1) is the specific α-chain in the CD11b/CD18 molecule, which is a member of the LFA-1 and β2 integrin subfamilies.

Monoclonal Mouse Anti-Human
CD11c, Protein 150,95

Clone: KB90
Isotype: IgG1, kappa

CE	F0713	FITC. Purified	100 tests, 1 mL

The antibody is directed against the CD11c chain of the CD11c/CD18 protein, which is an adhesion molecule of integrin type (integrin αXβ2). An alternative name is complement receptor type 4 or CR4. CD11c is expressed by a variety of cells, including granulocytes, monocytes, macrophages, NK cells, dendritic cells, hairy leukemia cells and malignant cells from B-cell lymphocytic leukemia.

Monoclonal Mouse Anti-Human
CD13

Clone: WM-47
Isotype: IgG1, kappa

CE	F0831	FITC. Purified	100 tests, 1 mL
CE	R0715	RPE. Purified	100 tests, 1 mL

CD13 is identical to aminopeptidase N. CD13 is expressed by committed granulocyte-monocyte progenitor (CFU-GM) cells, and normal granulocytic and monocytic cells at all stages of differentiation. Lymphocytes and platelets do not express CD13. Together with a panel of other antibodies, the CD13 antibody is considered essential for the initial evaluation of acute myeloid leukemias.

Monoclonal Mouse Anti-Human
CD14

Clone: TÜK4
Isotype: IgG2a, kappa

CE	F0844	FITC. Purified	100 tests, 1 mL
CE	R0864	RPE. Purified	100 tests, 1 mL

CD14 is a 55 kDa protein, which functions as a receptor for the complex of lipopolysaccharide (LPS) and LPS-binding protein (LPB). CD14 is primarily expressed on monocytes and macrophages. The antibody is of value in the detection of normal and neoplastic cells of the monocytic cell lineage, and in the immunophenotyping of acute myeloid leukemia.

Reference:

1. Wright SD, Ramos RA, Tobias PS, Ulevitch RJ, Mathison JC. CD14, a receptor for complexes of lipopolysaccharide (LPS) and LPS binding protein. Science 1990;249:1431-3.

Monoclonal Mouse Anti-Human
CD15

Clone: C3D-1
Isotype: IgM, kappa

CE	F0830	FITC. Purified	100 tests, 1 mL

Reacts with an oligosaccharide termed Lewis X (Le^x), or CD15, found on mature granulocytes and monocytes. Together with a panel of other antibodies, anti-CD15 is essential for the initial evaluation of acute myeloid leukemias.

Monoclonal Mouse Anti-Human
CD16, Fc Gamma Receptor III

Clone: DJ130c
Isotype: IgG1, kappa

CE	F7011	FITC. Purified	100 tests, 1 mL
CE	R7012	RPE. Purified	100 tests, 1 mL

Reacts with an antigen (FcγRIII) present on NK cells, neutrophils and basophils in peripheral blood and bone marrow.

Monoclonal Mouse Anti-Human
CD19

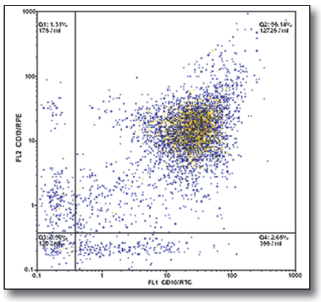
Clone: HD37
Isotype: IgG1, kappa

CE	C7224	APC. Purified	100 tests, 1 mL
CE	F0768	FITC. Purified	100 tests, 1 mL
RUO	PB985	Pacific Blue. Purified	100 tests, 1 mL
CE	R0808	RPE. Purified	100 tests, 1 mL
CE	C7066	RPE-Cy5. Purified	100 tests, 1 mL

CD19 is the broadest lineage-specific surface marker for B cells. CD19 is present on the surface of virtually all B lymphocytes, including early B progenitor cells (1), but it is lost upon terminal differentiation to plasma cells (2). CD19 is also expressed on follicular dendritic cells (1). B-lineage leukemias and lymphomas rarely lose the CD19 antigen (3).

References:

1. Pezzuto A, Dörken B, Feller A, Moldenhauer G, Schwartz R, Wernet P, et al. HD37 monoclonal antibody: a useful reagent for further characterization of 'non-T, non-B' lymphoid malignancies. In: Reinherz EL, Haynes BF, Nadler LM, Bernstein ID, editors. Leucocyte typing II. Proceedings of the 2nd International Workshop on Human Leukocyte Differentiation Antigens; 1984 Sept 17-20; Boston, USA, New York, Berlin, Heidelberg, Tokyo: Springer-Verlag; 1986. Volume 2, p. 391-402.
2. Sato S, Tedder TF. BC3. CD19 workshop panel report. In: Kishimoto T, Kikutani H, von dem Borne AEG, Goyert SM, Mason DY, Miyasaka M, et al., editors. Leucocyte typing VI. White cell differentiation antigens. Proceedings of the 6th International Workshop and Conference; 1996 Nov 10-14; Kobe, Japan. New York, London: Garland Publishing Inc.; 1997. p. 133-5.
3. Scheuermann RH, Racila E. CD19 antigen in leukaemia and lymphoma diagnosis and immunotherapy (review). Leuk Lymphoma 1995;18:385-97.



Cells from a case of acute lymphoblastic leukemia stained with Anti-CD10/FITC, Code F0826, and Anti-CD19/RPE, Code R0808.

Monoclonal Mouse Anti-Human
CD20

Clone: B-Ly1
Isotype: IgG1, kappa

CE	F0799	FITC. Purified	100 tests, 1 mL
CE	R7013	RPE. Purified	100 tests, 1 mL
CE	C7132	RPE-Cy5. Purified	100 tests, 1 mL

Reacts with an epitope located on the surface of B cells. CD20 appears early during B-cell maturation and is lost shortly before the terminal plasma cell stage.

Monoclonal Mouse Anti-Human
CD22

Clone: 4KB128
Isotype: IgG1, kappa

CE	C7281	APC. Purified	100 tests, 1 mL
CE	F7060	FITC. Purified	100 tests, 1 mL
CE	R7061	RPE. Purified	100 tests, 1 mL

CD22 appears in the cytoplasm of late pro and early pre-B cells and on the surface of mature B lymphocytes. Anti-CD22 is a pan-B reagent that enables detection of normal and neoplastic B cells in peripheral blood.

Monoclonal Mouse Anti-Human
CD23

Clone: MHM6
Isotype: IgG1, kappa

CE	F7062	FITC. Purified	100 tests, 1 mL
CE	R7108	RPE. Purified	100 tests, 1 mL

CD23, the low affinity IgE (Fc-epsilon) receptor, is a glycoprotein present on a subpopulation of B lymphocytes in germinal centres, and on EBV-transformed B-lymphoblastoid cell lines. CD23 is also expressed on monocytes and dendritic cells.

Monoclonal Mouse Anti-Human
CD24

Clone: SN3
Isotype: IgG1, kappa

CE	F7134	FITC. Purified	100 tests, 1 mL

Reacts with an antigen expressed at multiple stages of B-cell development, beginning with early progenitor cells and continuing through maturation. The antigen is lost as cells differentiate to plasma cells.

Monoclonal Mouse Anti-Human
CD25, Interleukin-2 Receptor

Clone: ACT-1
Isotype: IgG1, kappa

CE	F0801	FITC. Purified	100 tests, 1 mL
CE	R0811	RPE. Purified	100 tests, 1 mL

CD25 is the low-affinity α-chain of the interleukin-2 receptor that has at least 3 subunits (α, β, γ). The CD25 antigen is expressed on activated T and B cells and activated macrophages. The antibody is of value in the study of activated lymphoid cells in normal and pathological specimens.

Monoclonal Mouse Anti-Human
CD27

Clone: M-T271
Isotype: IgG1, kappa

RUO	F7178	FITC. Purified	100 tests, 1 mL
RUO	R7179	RPE. Purified	100 tests, 1 mL

CD27 is a transmembrane antigen expressed on the majority of human peripheral blood T cells, on a subpopulation of B cells, and on a portion of natural killer (NK) cells. CD27 acts in a co-stimulatory fashion with the ligand, CD70. During activation, the expression of CD27 is increased on B cells and unprimed T cells. The antibody is valuable for the study of B and T-cell activation and differentiation.

Monoclonal Mouse Anti-Human
CD28

Clone: CD28.1
Isotype: IgG1, kappa

RUO	F7163	FITC. Purified	100 tests, 1 mL
RUO	R7164	RPE. Purified	100 tests, 1 mL

CD28 is a T-cell surface molecule expressed on approximately 95% of CD4+ and 50% of CD8+ peripheral T cells. CD28 mediates adhesion to activated B cells through the ligands CD80 and CD86, and is believed to play an important role in the interaction between T and B cells. Enumeration of CD8+ CD28+ T cells may be of relevance in the study of HIV-1 infection, since anti-HIV activity predominantly resides in this subset.

Monoclonal Mouse Anti-Human
CD30

Clone: Ber-H2
Isotype: IgG1, kappa

CE	F0849	FITC. Purified	100 tests, 1 mL

CD30 is consistently expressed by Reed-Sternberg cells in Hodgkin's disease. It is also present in certain non-Hodgkin's lymphomas, e.g. anaplastic large cell lymphoma (ALCL), adult T-cell lymphoma/leukemia (ATLL), and, occasionally, in other types.

Monoclonal Mouse Anti-Human
CD33

Clone: WM-54
Isotype: IgG1, kappa

CE	F0832	FITC. Purified	100 tests, 1 mL
CE	R0745	RPE. Purified	100 tests, 1 mL

CD33 is a member of the Siglec family (sialic acid binding Ig-like lectins) and is also referred to as Siglec-3. The main cellular expression of CD33 is in myeloid progenitors, monocytes/macrophages and in granulocyte progenitors, while the expression is low in mature granulocytes. Together with a panel of other antibodies, the CD33 antibody is considered essential for the initial evaluation of acute myeloid leukemia (AML). The fluorescence intensity of RPE conjugates is, generally, somewhat higher than that of corresponding FITC conjugates. As CD33 is one of the more weakly expressed antigens, the use of R0745 may be preferred to F0832 in some situations.

Monoclonal Mouse Anti-Human
CD34 Class III

Clone: BIRMA-K3
Isotype: IgG1, kappa

CE	C7238	APC. Purified	50 tests, 0.5 mL
CE	F7081	FITC. Purified	100 tests, 1 mL
CE	R7125	RPE. Purified	100 tests, 1 mL

Reacts with an antigen present on immature hematopoietic cells. The antibody is of value in the identification of hematopoietic progenitor cells, and in the immunophenotyping of leukemias. R7125 is recommended in particular for the labeling of hematopoietic progenitor cells.

Monoclonal Mouse Anti-Human
CD38

Clone: AT13/5
Isotype: IgG1, kappa

CE	F7101	FITC. Purified	100 tests, 1 mL
CE	R7144	RPE. Purified	100 tests, 1 mL

CD38 is expressed on plasma cells, on early cells of B and T cell lineages, and on activated B and T cells. Approximately 60% of peripheral blood mononuclear CD34+ cells express CD38. The least mature CD34+ cells are characterized by a lack of CD38. The antibody is of value for immunophenotyping of acute leukemias, and in research studies on the role of activated T cells in immunodeficiency diseases and in autoimmune diseases.

Monoclonal Mouse Anti-Human
CD41, Platelet Glycoprotein IIb

Clone: 5B12
Isotype: IgG1, kappa

CE	F7088	FITC. Purifed	100 tests, 1 mL
CE	R7058	RPE. Purified	100 tests, 1 mL

CD41 is a 135 kDa protein which is a selective marker of platelets and platelet precursors. CD41 is expressed to a variable degree in megakaryoblastic/cytic leukemias. It is absent from, or defective on the platelets of patients suffering from Glanzmann's thrombasthenia.

Monoclonal Mouse Anti-Human
CD42b, Platelet Glycoprotein Ib

Clone: AN51
Isotype: IgG2a, kappa

CE	R7014	RPE. Purified	100 tests, 1 mL

CD42b is a 145 kDa protein restricted to platelets and megakaryocytes. CD42a, CD42b, CD42c and CD42d form a complex in the platelet plasma membrane which serves as a receptor for von Willebrand factor and thrombin, and mediates adhesion of platelets to subendothelial matrices exposed upon damage to the endothelium. Absence of the CD42 complex leads to the Bernard-Soulier syndrome. The binding sites for von Willebrand factor and thrombin lies on CD42b.

Monoclonal Mouse Anti-Human
CD43

Clone: DF-T1
Isotype: IgG1, kappa

CE	F7102	FITC. Purified	100 tests, 1 mL

Reacts with a heavily glycosylated transmembrane protein, also called leucosialin. CD43 is expressed on virtually all leucocytes.

Monoclonal Mouse Anti-Human
CD45, Leucocyte Common Antigen

Clone: 2D1
Isotype: IgG1, kappa

CE	PR701	PerCP. Purified NEW	100 tests, 1 mL

The antibody is intended for use in the identification of cells expressing CD45. CD45 is one of the most abundant leucocyte cell surface glycoproteins and is expressed exclusively on cells of the hematopoietic system and their progenitors (1). In flow cytometry, anti-CD45, together with a panel of other antibodies, is considered essential for the initial evaluation of chronic lymphoproliferative disorders and acute leukemias (2).

References:

1. Leong AS-Y, Cooper K, Leong FJW-M. Manual of diagnostic antibodies for immunohistology. London: Oxford University Press;1999. p. 95-8.

2. Braylan RC, Orfao A, Borowitz MJ, Davis BH. Optimal number of reagents required to evaluate hematolymphoid neoplasias: results of an international consensus meeting. Cytometry 2001;46:23-7.

Monoclonal Mouse Anti-Human
CD45, Leucocyte Common Antigen

Clone: T29/33
Isotype: IgG1, kappa

CE	C7230	APC. Purified	100 tests, 1 mL
RUO	CA697	Cascade Yellow. Purified	100 tests, 1 mL
CE	F0861	FITC. Purified	100 tests, 1 mL
RUO	PB986	Pacific Blue. Purified	100 tests, 1 mL
CE	R7087	RPE. Purified	100 tests, 1 mL
CE	C7099	RPE-Cy5. Purified	100 tests, 1 mL

Labels the cell membrane of almost all leucocytes. The expression of CD45 on the surface of mature granulocytes is less than that of lymphocytes.

Monoclonal Mouse Anti-Human
CD45R0

Clone: UCHL1
Isotype: IgG2a, kappa

CE	F0800	FITC. Purified	100 tests, 1 mL
CE	R0843	RPE. Purified	100 tests, 1 mL

Reacts with an epitope unique for CD45R0. The antibody labels most thymocytes, a subpopulation of resting T cells within both CD4 and CD8 subsets and mature, activated T cells.

Monoclonal Mouse Anti-Human
CD45RA

Clone: 4KB5
Isotype: IgG1, kappa

CE	R7086	RPE. Purified	100 tests, 1 mL

Reacts with the CD45 isoforms, ABC and AB. The antibody labels most B cells in peripheral blood and tissue sections.

Monoclonal Mouse Anti-Human
CD54, ICAM-1

Clone: 6.5B5
Isotype: IgG1, kappa

RUO	F7143	FITC. Purified	100 tests, 1 mL

Reacts with the cell surface glycoprotein ICAM-1. ICAM-1 (intercellular adhesion molecule-1) is expressed mainly on monocytes and endothelial cells, but expression can be induced or upregulated on many cell types including B and T lymphocytes.

Monoclonal Mouse Anti-Human
CD56

Clone: C5.9
Isotype: IgG2b, kappa

CE	R7251	RPE. Purified	100 tests, 1 mL

Anti-CD56, clone C5.9, has a superior performance compared with Anti-CD56, clone MOC-1. The antibody labels natural killer cells and a subset of CD4+ and CD8+ cells in peripheral blood. CD56 is expressed in a number of malignancies, including some myeloid leukemias, myelomas, neuroblastomas and small cell lung cancers.
In flow cytometry R7251 labels CD56+ cells with a higher fluorescence intensity than R7127 and provides a better separation between positive and negative cells.

Monoclonal Mouse Anti-Human
CD56

Clone: MOC-1
Isotype: IgG1, kappa

CE	R7127	RPE. Purified	100 tests, 1 mL

Reacts with natural killer cells and a subset of CD4+ and CD8+ T cells in peripheral blood. CD56 is present in a number of tumors, including some myeloid leukemias, myelomas, neuroblastomas and small cell lung cancer (SCLC).
In flow cytometry R7251 labels CD56+ cells with a higher fluorescence intensity than R7127 and provides a better separation between positive and negative cells.

Monoclonal Mouse Anti-Human
CD57

Clone: TB01
Isotype: IgM, kappa

CE F7270 FITC. Purified 100 tests, 1 mL

CD57 is expressed by subsets of NK cells and CD8-positive lymphocytes, and by a small percentage of CD4-positive/CD45R0-positive T lymphocytes in lymph node germinal centres. The number of CD57-positive cells increases in some pathologies characterized by an imbalance of CD4/CD8 lymphocytes. Neuroectodermal cells and striated muscle also express CD57 (1, 2).

References:
1. Leong AS-Y, Cooper K, Leong FJW-M. CD 57. Manual of diagnostic antibodies for immunohistology. London: Oxford University Press; 1999. p. 103-6.
2. Funaro A, Malavasi F. NK5. CD57 Workshop panel report. In: Kishimoto T, Kikutani H, von dem Borne AEG, Goyert SM, Mason DY, Miyasaka M, et al., editors. Leucocyte typing VI. White cell differentiation antigens. Proceedings of the 6th International Workshop and Conference; 1996 Nov 10-14; Kobe, Japan. New York, London: Garland Publishing Inc.; 1997. p. 274-6.

Monoclonal Mouse Anti-Human
CD61, Platelet Glycoprotein IIIa

Clone: Y2/51
Isotype: IgG1, kappa

CE C7280 APC. Purified 100 tests, 1 mL
CE F0803 FITC. Purified 100 tests, 1 mL

Detects platelets in peripheral blood and bone marrow and reacts also with megakaryocytes and megakaryoblasts. The antibody is of value in the diagnosis of megakaryoblastic leukemia.

Monoclonal Mouse Anti-Human
CD64, Fc Gamma Receptor I

Clone: 10.1
Isotype: IgG1, kappa

CE C7278 APC. Purified 100 tests, 1 mL
CE R7219 RPE. Purified 100 tests, 1 mL

Reacts with an antigen (FcγRI) constitutively expressed on monocytes, macrophages and blood dendritic cells. The antigen expression can be induced on neutrophils and eosinophils by interferon γ and granulocyte colony-stimulating factor (G-CSF).

Monoclonal Mouse Anti-Human
CD66abce

Clone: Kat4c
Isotype: IgG1, kappa

CE F7112 FITC. Purified 100 tests, 1 mL

CD66 refers to a family of heavily glycosylated glycoproteins whose members are designated CD66a to CD66f. CD66 antibodies often react with two or more members of this family, and antibody Kat4c recognizes three myeloid-associated molecules (CD66a, b, c) and also CD66e (CEA). In consequence, the antibody reacts with myeloid cells at differing stages of maturity (from promyelocytes to granulocytes), and also with a variety of epithelial cells. The antibody is of value in the immunophenotyping of leukemias of myeloid origin.

Monoclonal Mouse Anti-Human
CD68

Clone: KP1
Isotype: IgG1, kappa

CE F7135 FITC. Purified 100 tests, 1 mL

Reacts with an intracellular lysosomal membrane protein expressed by human monocytes, macrophages and myeloid cells. The antibody is of value for the immunophenotyping of neoplasms of myeloid origin.

Monoclonal Mouse Anti-Human
CD69

Clone: FN50
Isotype: IgG1, kappa

RUO F7172 FITC. Purified 100 tests, 1 mL
RUO R7173 RPE. Purified 100 tests, 1 mL

CD69 is not expressed by resting T cells, but is upregulated upon in vitro T-cell activation. CD69 is an early activation antigen expressed prior to CD25 and CD71. Measurements of CD69 expression may be applied to enumeration of activated T cells and studies of the proliferative capacity of T cells.

Monoclonal Mouse Anti-Human
CD71, Transferrin Receptor

Clone: Ber-T9
Isotype: IgG1, kappa

CE F0829 FITC. Purified 100 tests, 1 mL

Reacts with many proliferating cells in both normal and neoplastic tissue.

Monoclonal Mouse Anti-Human
CD79αcy

Clone: HM57
Isotype: IgG1, kappa

CE C7252 APC. Purified 100 tests, 1 mL
CE R7159 RPE. Purified 100 tests, 1 mL

Synthetic human CD79α peptide has been used as immunogen. Anti-CD79αcy, HM57, labels normal and neoplastic B cells. It reacts with an intracytoplasmic epitope. The antibody is useful for the demonstration of B cells in many mammalian species (1).

Reference:
1. Jones M, Cordell JL, Beyers AD, Tse AG, Mason DY. Detection of T and B cells in many animal species using cross-reactive antipeptide antibodies. J Immunol 1993;150:5429-35.

Monoclonal Mouse Anti-Human
CD79β

Clone: SN8
Isotype: IgG1, kappa

CE F7137 FITC. Purified 100 tests, 1 mL
CE R7272 RPE. Purified 100 tests, 1 mL

Reacts with an epitope on the extracellular portion of the β-chain of the CD79 antigen. The antibody is specific for B cells, and is of value for the study of leukemias and lymphomas.

Monoclonal Mouse Anti-Human
CD86

Clone: BU63
Isotype: IgG1, kappa

RUO F7205 FITC. Purified 100 tests, 1 mL

Reacts with resting monocytes and dendritic cells, and activated, but not resting, T, NK and B cells. The expression of the CD86 antigen in large B-cell lymphomas and on Reed-Sternberg cells of Hodgkin's disease appears to be useful for the study of maturation and differentiation in the B-cell lineage.

Monoclonal Mouse Anti-Human
CD90

Clone: 5E10
Isotype: IgG1, kappa

CE F7274 FITC. Purified 100 tests, 1mL
CE R7275 RPE. Purified 100 tests, 1mL

CD90 is identical to the cell surface glycoprotein known as Thy-1. CD90 is expressed on primitive hematopoietic stem cells in normal bone marrow, cord blood and fetal liver cells. The antibody is of value for the study of leukemias of myeloid origin.

Monoclonal Mouse Anti-Human
CD95, Fas

Clone: DX2
Isotype: IgG1, kappa

RUO R7154 RPE. Purified 100 tests, 1 mL

CD95, originally named Fas, is involved in mediation of apoptosis (programmed cell death). CD95 is a cell surface glycoprotein expressed by a substantial minority of resting T and B cells, and by about 5% of resting NK cells. Among T cells, CD95 is preferentially expressed by CD45RA^{low} CD45RO^{high} memory T cells. CD95 is strongly upregulated on activated T, B and NK cells.

Monoclonal Mouse Anti-Human
CD103, Mucosa Lymphocyte Antigen (MLA)

Clone: Ber-ACT8
Isotype: IgG1, kappa

CE F7138 FITC. Purified 100 tests, 1 mL
CE R7188 RPE. Purified 100 tests, 1 mL

CD103 is the αE integrin subunit of the heterodimeric αEβ7 integrin belonging to a small β7 integrin subfamily. CD103 is expressed on more than 95% of intraepithelial CD8+ cells and on 40% of mucosa-associated T cells, whereas less than 2% of resting blood lymphocytes are CD103-positive. In several malignant conditions, such as T-cell lymphomas and hairy cell leukemia, the cells express CD103. The antibody is well-suited for the immunophenotyping of leukemias and lymphomas.

Reference:
1. Kruschwitz M, Fritzsche G, Schwarting R, Micklem K, Mason DY, Falini B, et al. Ber-ACT8: monoclonal antibody to the mucosa lymphocyte antigen. J Clin Pathol 1991;44:636-45.

Monoclonal Mouse Anti-Human
CD117, c-kit

Clone: 104D2
Isotype: IgG1, kappa

CE C7244 APC. Purified 100 tests, 1 mL
CE R7145 RPE. Purified 100 tests, 1 mL

CD117, a membrane tyrosine kinase receptor, is encoded by the *KIT* proto-oncogene, also called *c-kit*. CD117 is expressed on 1-4% of normal bone marrow cells. The majority of positive cells (50-70%) co-expresses CD34 and comprises progenitor cells and their precursors of all hematopoietic cell lineages. The antibody is of value in the study of acute myeloid leukemia.

Monoclonal Mouse Anti-Human
CD138

Clone: MI15
Isotype: IgG1, kappa

CE C7256 APC. Purified 100 tests, 1 mL
CE R7229 RPE. Purified 100 tests, 1 mL

CD138, syndecan-1, is a transmembrane proteoglycan with a main cellular expression in stratified and simple epithelia. Within the hemopoietic system, CD138 is mainly confined to late stages of B-cell differentiation (1). CD138 expression is reduced during malignant transformation of various epithelia, and CD138 is rapidly shed by myeloma cells entering into apoptosis, making CD138 a marker of viable myeloma cells (2).

References:
1. Jourdan M, Ferlin M, Legouffe E, Horvathova M, Liautard J, Rossi JF, et al. The myeloma cell antigen syndecan-1 is lost by apoptotic myeloma cells. Br J Haematol 1988;100:637-46.
2. Costes V, Magen V, Legouffe E, Durand L, Baldet P, Rossi J-F, et al. The MI15 monoclonal antidody (anti-syndecan-1) is a reliable marker for quantifying plasma cells in paraffin-embedded bone marrow biopsies. Hum Pathol 1999;30:1405-11.

Monoclonal Mouse Anti-Human
CD235a, Glycophorin A

Clone: JC159
Isotype: IgG1, kappa

CE F0870 FITC. Purified 100 tests, 1 mL
CE R7078 RPE. Purified 100 tests, 1 mL

Reacts with normal erythroid cells at essentially all stages of differentiation from erythroblasts to mature erythrocytes. The antibody reacts with the majority of cases of erythroleukemia.

c-kit

See: CD117, c-kit

Monoclonal Mouse Anti-Human
Epithelial Antigen

Clone: Ber-EP4
Isotype: IgG1, kappa

CE F0860 FITC. Purified 100 tests, 1 mL

This antibody shows a very broad reactivity with the majority of human epithelial tissues. It does rarely label mesothelial cells. The antibody labels an epitope present on the cell surface and in the cytoplasm. In flow cytometry the antibody is useful for the detection and classification of normal and neoplastic cells of epithelial origin in serous effusions, or in single cell suspensions prepared from tissues.

Fas

See: CD95, Fas

Fc Gamma Receptor I and III

See: CD64 and CD16, respectively

FMC7

See: B Cell

Glycophorin A

See: CD235a, Glycophorin A

Monoclonal Mouse Anti-Human
HLA-ABC Antigen

Clone: W6/32
Isotype: IgG2a, kappa

CE R7000 RPE. Purified 100 tests, 1 mL

Is directed against a monomorphic epitope on the 45 kDa polypeptide products of the *HLA-A*, *B* and *C* loci. These antigens belong to class I of the mammalian major histocompatibility complex (MHC), in humans known as human leucocyte-associated antigens (HLA). The antibody labels all nucleated cells in peripheral blood or tonsil cell preparations, including polymorphs, monocytes, lymphocytes and eosinophils. Erythrocytes are not labeled. The antibody is relevant for the study of HLA class I expression in cells from solid tumors. The reagent is not intended for use in tissue typing.

Monoclonal Mouse Anti-Human
HLA-DP, DQ, DR Antigen

Clone: CR3/43
Isotype: IgG1, kappa

CE F0817 FITC. Purified 100 tests, 1 mL

Labels principally B cells, most monocytes and activated T cells, but is unreactive with normal T cells and polymorphs. The antibody is useful for the characterization of leukemias and lymphomas, and for the study of activated T cells. The reagent is not intended for use in tissue typing.

Monoclonal Mouse Anti-Human
HLA-DR Antigen

Clone: AB3
Isotype: IgG2a, kappa

CE F7266 FITC. Purified 100 tests, 1 mL
CE R7267 RPE. Purified 100 tests, 1 mL

HLA-DR antigen is constitutively expressed on antigen-presenting cells, such as B lymphocytes, monocytes and dendritic cells, but it can also be detected on activated T lymphocytes and activated granulocytes. Antibodies to HLA-DR antigen are together with a panel of other antibodies considered essential for the initial evaluation of acute leukemia, chronic T and B-cell leukemia, and myeloid leukemia. The reagent is not intended for use in tissue typing.

ICAM-1

See: CD54, ICAM-1

Polyclonal Rabbit Anti-Human
IgA, Specific for Alpha-Chains

CE F0057 FITC. Affinity-isolated $F(ab')_2$ 1 mL

The antigen used for immunization is serum IgA. F0057 is intended for use in flow cytometry for the detection of surface IgA on normal and neoplastic B cells.

Polyclonal Rabbit Anti-Human
IgD, Specific for Delta-Chains

CE F0059 FITC. Affinity-isolated $F(ab')_2$ 1 mL
CE R5112 RPE. Affinity-isolated $F(ab')_2$ 100 tests, 1 mL

The antigen used for immunization is serum IgD. F0059 and R5112 are intended for use in flow cytometry for the detection of surface IgD on normal and neoplastic B cells.

Polyclonal Rabbit Anti-Human
IgG, Specific for Gamma-Chains

CE F0056 FITC. Affinity-isolated $F(ab')_2$ 1 mL

The antigen used for immunization is serum IgG. F0056 is intended for use in flow cytometry for the detection of surface IgG on normal and neoplastic B cells.

Polyclonal Rabbit Anti-Human
IgM, Specific for Mu-Chains

CE F0058 FITC. Affinity-isolated $F(ab')_2$ 100 tests, 1 mL
CE R5111 RPE. Affinity-isolated $F(ab')_2$ 100 tests, 1 mL

The antigen used for immunization is serum IgM. F0058 and R5111 are intended for use in flow cytometry for the detection of surface IgM on normal and neoplastic B cells.

Interleukin-2 Receptor

See: CD25, Interleukin-2 Receptor

Polyclonal Rabbit Anti-Human
Kappa Light Chains

CE C0222 APC. Affinity-isolated $F(ab')_2$ 100 tests, 1 mL
CE F0434 FITC. Affinity-isolated $F(ab')_2$ 100 tests, 1 mL
CE R0436 RPE. Affinity-isolated $F(ab')_2$ 100 tests, 1 mL

These reagents have been produced in a manner that ensures a particularly wide specificity for kappa-chains. Most B cells, with the exception of pre-B progenitors, pre-B cells and mature plasma cells, express immunoglobulin on their surface. Each cell expresses only one light chain type. In normal peripheral blood and lymph nodes there is a mixture of kappa+ and lambda+ cells with two-thirds of the cells expressing kappa and one-third expressing lambda (1).
The reagents are of value for the demonstration of the monoclonal nature (light chain restriction) of lymphoid neoplasms.

Reference:
1. Johnson A, Olofsson T. Flow cytometric clonal excess analysis of peripheral blood, routine handling, and pitfalls in interpretation. Cytometry 1993;14:188-95.

Ki-1 Antigen

See: CD30

Monoclonal Mouse Anti-Human
Ki-67 Antigen

Clone: Ki-67
Isotype: IgG1, kappa

CE F0788 FITC. Purified 100 tests, 1 mL

Reacts with a nuclear antigen expressed by all human proliferating cells. The antibody recognizes cells at all stages of the cell cycle (late G_1, S, M and G_2 phases), but not cells in G_0 phase. The reaction with this antibody serves as an indicator of the growth fraction; that is the number of cells undergoing active division.

Monoclonal Mouse Anti-Human
Ki-67 Antigen

Clone: MIB-1
Isotype: IgG1, kappa

RU0 F7268 FITC. Purified 100 tests, 1 mL

The MIB-1 antibody has now been established as the reference monoclonal mouse antibody for the demonstration of the Ki-67 antigen, a nuclear antigen expressed by all human proliferating cells. The antibody recognizes proliferating cells at all stages of the cell cycle (late G_1, S, M and G_2 phases), but not cells in G_0 phase.

References:
1. Scholzen T, Gerdes J. The Ki-67 protein: from the known and the unknown. J Cell Physiol 2000;182:311-22.
2. Endl E, Hollmann C, Gerdes J. Antibodies against the Ki-67 protein: assessment of the growth fraction and tools for cell cycle analysis. In: Darzynkiewicz Z, Crissmann HA, Robinson JP, editors. Methods in cell biology: Cytometry. 3rd ed. San Diego: Academic Press; 2001. Part A. Volume 63. p. 399-418.

Polyclonal Rabbit Anti-Human
Lactoferrin

CE F0395 FITC. Ig fraction 100 tests, 1 mL

Reacts with the secondary granules of myeloid cells. In flow cytometric immunophenotyping of leukemias, lactoferrin is a useful marker for the subclassification of acute myeloid leukemia as it is preferentially present in the more mature myeloid subpopulation. F0395 has been optimized for the labeling of intracellular lactoferrin when used in combination with the Dako IntraStain Fixation and Permeabilization Kit, Code K2311.

Polyclonal Rabbit Anti-Human
Lambda Light Chains

CE F0435 FITC. Affinity-isolated $F(ab')_2$ 100 tests, 1 mL
CE R0437 RPE. Affinity-isolated $F(ab')_2$ 100 tests, 1 mL

The antigen used for immunization is a pool of human lambda Bence Jones proteins. F0435 and R0437 are intended for use in flow cytometry for the detection of lambda light chains of surface immunoglobulin on normal and neoplastic B cells. The antibody is of value for the demonstration of the monoclonal nature (light chain restriction) of lymphoid neoplasms.

Leucocyte Common Antigen

See: CD45

Polyclonal Rabbit Anti-Human
Lysozyme EC 3.2.1.17

CE F0372 FITC. Ig fraction 100 tests, 1 mL

Reacts with the primary and secondary granules of myeloid cells. In flow cytometric immunophenotyping of leukemias, lysozyme is a useful marker for the subclassification of acute myeloid leukemia.

Mucosa-Lymphocyte Antigen (MLA)

See: CD103, Mucosa-Lymphocyte Antigen (MLA)

Monoclonal Mouse Anti-Human
Myeloperoxidase

Clone: MPO-7
Isotype: IgG1, kappa

CE C7246 APC. Purified 100 tests, 1 mL
CE F0714 FITC. Purified 100 tests, 1 mL
CE R7209 RPE. Purified 100 tests, 1 mL

Anti-Myeloperoxidase, MPO-7, reacts with granula in the cytoplasm of neutrophil granulocytes and with monocytes. It is valuable for phenotyping acute leukemias since it detects myeloperoxidase in the great majority of cases of acute myeloid leukemia.

Monoclonal Mouse Anti-Human
Plasma Cell

Clone: VS38c
Isotype: IgG1, kappa

CE F7149 FITC. Purified 100 tests, 1 mL

Recognizes an intracellular protein of 63 kDa identical with the rough endoplasmic reticulum-associated protein p63. The antibody labels plasma cells strongly, but frequently also labels melanocytic cells, particularly melanoma cells, and a number of epithelial cells, e.g. in mucous glands and tonsils, and secretory epithelia in breast, thyroid and pancreas, both benign and malignant.

Platelet Glycoprotein Ib, IIb and IIIb

See: CD42b, CD41 and CD61, respectively

Protein 150,95

See: CD11c, Protein 150,95

Monoclonal Mouse Anti-Human
Terminal Deoxynucleotidyl Transferase

Clone: HT-6
Isotype: IgG1, kappa

CE F7139 FITC. Purified 50 tests, 0.5 mL

Reacts with the nuclei of normal T and B-lymphocyte precursors and their neoplastic equivalents (e.g. T cell and pre-B cell acute lymphoblastic leukemias and lymphomas).

MultiMix™ Dual-Color Reagents

Dako MultiMix™ Dual-Color Reagents are based on the combination of two or more antibodies labeled with fluorescein isothiocyanate (FITC) and R-phycoerythrin (RPE), respectively. This combination is particularly effective as both fluorochromes can be excited at 488 nm. The fluorescence emission for FITC is in the green region around 530 nm while the RPE emission is in the orange region above 570 nm.

Monoclonal Mouse Anti-Human
CD2/FITC +
CD19/RPE

Clones: MT910 and HD37
Isotypes: IgG1, kappa and IgG1, kappa

CE FR894 FITC and RPE. Purified 50 tests, 0.5 mL

FR894 allows simultaneous detection and enumeration of CD2+ cells and B cells.

Monoclonal Mouse Anti-Human
CD3/FITC +
CD4/RPE

Clones: UCHT1 and MT310
Isotypes: IgG1, kappa and IgG1, kappa

CE FR875 FITC and RPE. Purified 50 tests, 0.5 mL

FR875 allows simultaneous detection and enumeration of T cells and the helper/inducer T-cell subset.

Monoclonal Mouse Anti-Human
CD3/FITC +
CD8/RPE

Clones: UCHT1 and DK25
Isotypes: IgG1, kappa and IgG1, kappa

CE FR881 FITC and RPE. Purified 50 tests, 0.5 mL

FR881 allows simultaneous detection and enumeration of T cells and the suppressor/cytotoxic T-cell subset.

Monoclonal Mouse Anti-Human
CD3/FITC +
CD19/RPE

Clones: UCHT1 and HD37
Isotypes: IgG1, kappa and IgG1, kappa

CE FR866 FITC and RPE. Purified 50 tests, 0.5 mL

FR866 allows simultaneous detection and enumeration of T cells and B cells.

Monoclonal Mouse Anti-Human
CD3/FITC +
CD56/RPE

Clones: UCHT1 and C5.9
Isotypes: IgG1, kappa and IgG2b, kappa

CE FR912 FITC and RPE. Purified 50 tests, 0.5 mL

FR912 allows simultaneous detection and enumeration of T cells and natural killer cells.

Monoclonal Mouse Anti-Human
CD4/FITC +
CD8/RPE

Clones: MT310 and DK25
Isotypes: IgG1, kappa and IgG1, kappa

CE FR868 FITC and RPE. Purified 50 tests, 0.5 mL

FR868 allows simultaneous detection and enumeration of helper/inducer T cell and suppressor/cytotoxic T-cell subsets.

Monoclonal Mouse Anti-Human
CD5/FITC +
CD19/RPE

Clones: DK23 and HD37
Isotypes: IgG1, kappa and IgG1, kappa

CE FR882 FITC and RPE. Purified 50 tests, 0.5 mL

FR882 allows simultaneous detection and enumeration of CD5+ cells and B cells.

Monoclonal Mouse Anti-Human
CD5/FITC +
CD20/RPE

Clones: DK23 and B-Ly1
Isotypes: IgG1, kappa and IgG1, kappa

CE FR729 FITC and RPE. Purified 50 tests, 0.5 mL

FR729 allows simultaneous detection and enumeration of CD5+ T cells and CD20+ B cells.

Monoclonal Mouse Anti-Human
CD10/FITC +
CD19/RPE

Clones: SS2/36 and HD37
Isotypes: IgG1, kappa and IgG1, kappa

CE FR883 FITC and RPE. Purified 50 tests, 0.5 mL

FR883 allows simultaneous detection and enumeration of CD10+ cells and B cells.

Monoclonal Mouse Anti-Human
CD45/FITC +
CD14/RPE

Clones: T29/33 and TÜK4
Isotypes: IgG1, kappa and IgG2a, kappa

CE FR700 FITC and RPE. Purified 50 tests, 0.5 mL

FR700 allows simultaneous subdivision of leucocytes into lymphocytes, monocytes and granulocytes.

Monoclonal Mouse Anti-Human
HLA-DP, DQ, DR Antigen/FITC +
CD3/RPE

Clones: CR3/43 and UCHT1
Isotypes: IgG1, kappa and IgG1, kappa

CE FR867 FITC and RPE. Purified 50 tests, 0.5 mL

FR867 allows simultaneous detection and enumeration of MHC class II antigen-positive cells and T cells. The reagent is not intended for use in tissue typing.

Polyclonal Rabbit Anti-Human
Kappa Light Chains/FITC +
Monoclonal Mouse Anti-Human
CD19/RPE

Clone: HD37
Isotype: IgG1, kappa

CE FR048 FITC. Affinity-isolated $F(ab')_2$; RPE. Purified 50 tests, 0.5 mL

FR048 allows the detection and enumeration of kappa light chains on B cells.

MultiMix™ Dual-Color Reagents (continued)

Polyclonal Rabbit Anti-Human
Kappa Light Chains/FITC +
Lambda Light Chains/RPE

CE FR481 FITC and RPE. Affinity-isolated $F(ab')_2$ 50 tests, 0.5 mL

FR481 allows simultaneous detection and enumeration of kappa and lambda light chain bearing cells.

Polyclonal Rabbit Anti-Human
Lambda Light Chains/FITC +
Monoclonal Mouse Anti-Human
CD19/RPE

Clone: HD37
Isotype: IgG1, kappa

CE FR044 FITC. Affinity-isolated $F(ab')_2$; RPE. Purified 50 tests, 0.5 mL

FR044 allows the detection and enumeration of lambda light chains on B cells.

MultiMix™

Triple-Color Reagents

- Stable Reagents
- Easy Instrument Compensation
- Reliable Results
- Ready to Use
- Cost-Effective and Time-Saving
- Technical Support

Fluorochrome Combinations
FITC/RPE/APC and FITC/RPE/RPE-Cy5

Our new product, CD45/PerCP, Code PR701 is available as drop-in reagent for FITC/RPE/APC MultiMix™ products.

MultiMix™

Triple-Color Reagents and Corresponding Antigen Marker Panels Suggested as an Aid in the Differential Diagnosis of Hematological Malignancies

Initial Evaluation Panel	
CD8/CD4/CD3	TC660
CD3/CD19/CD45	TC690
CD19/CD56/CD3	TC662
CD20/CD5/CD19	TC663
CD19/Lambda/Kappa	TC669
CD38/CD56/CD45	TC671
CD19/CD34/CD45	TC672
CD61/CD235a/CD45	TC673
MPO/CD79acy/CD3	TC667*
TdT/CD22/CD3	TC668*

Chronic B Cell Panel	
FMC7/CD23/CD19	TC683
CD5/CD10/CD19	TC664
CD43/CD79β/CD19	TC684
CD103/CD11c/CD19	TC665

Acute B Cell Panel	
TdT/IgM/CD79acy	TC682*
CD19/CD10/CD45	TC676
CD19/CD34/CD22	TC689

Chronic T Cell Panel	
CD2/CD7/CD3	TC677
CD57/CD7/CD3	TC678

Acute T Cell Panel	
CD1a/CD7/CD3	TC681
CD2/CD34/CD5	TC666
CD2/CD7/CD3	TC677

NK Cell Panel	
CD57/CD56/CD3	TC679
CD16/CD56/CD3	TC661
CD57/CD8/CD3	TC680
CD57/CD7/CD3	TC678

Plasma Cell Panel	
CD38/CD56/CD19	TC674
Plasma Cell/Lambda/Kappa	TC670*

Acute Myeloid Panel	
CD71/CD235a/CD45	TC675
CD41/CD34/CD61	TC687
CD15/CD34/CD64	TC688
CD13/HLA-DR/CD117	TC685
CD33/CD34/CD117	TC686

The Initial Evaluation Panel allows evaluation of the presence of normal hematopoietic cells and malignant blast cell populations. The additional lineage and differentiation marker panels allow subgroup classification of most leukemias and lymphomas. Please note that interpretation of results must be made within the context of the patient's clinical history and other diagnostic tests by a certified professional.

* The reagent is optimized for intracellular staining

MultiMix™ Triple-Color Reagents

Dako MultiMix™ Triple-Color Reagents are based on the combination of three antibodies labeled with fluorescein isothiocyanate (FITC), R-phycoerythrin (RPE) and allophycocyanin (APC) or FITC, RPE and RPE-Cy5. The fluorochrome RPE-Cy5 consists of the cyanine dye, Cy5, covalently coupled to RPE. The Triple-Color Reagents are designed for flow cytometers equipped with a 488 nm (blue) light source for excitation of FITC, RPE and RPE-Cy5, and a 633/635 nm (red) light source for excitation of APC.

FITC/RPE/APC Reagent Line

Monoclonal Mouse Anti-Human
B Cell (FMC7)/FITC +
CD23/RPE +
CD19/APC

Clones: FMC7, MHM6 and HD37
Isotypes: IgM, kappa, IgG1, kappa and IgG1, kappa

CE TC683 FITC, RPE and APC. Purified 50 tests, 1 mL

TC683 allows simultaneous detection and enumeration of FMC7-positive, CD23-positive and CD19-positive cells. The FMC7 antigen is expressed by B cells in normal peripheral blood. The antigen is also expressed by malignant cells in chronic lymphoproliferative disorders, including B-cell prolymphocytic leukemia, hairy cell leukemia, mantle cell lymphoma, follicle centre lymphoma, marginal zone lymphoma, mucosa-associated lymphoid tissue lymphoma, diffuse large cell lymphoma, Burkitt's lymphoma and Waldenström macroglobulinemia. CD23 is identical to the low affinity IgE receptor (FcεRII) found on B cells. CD23 is primarily expressed by B cells and monocytes and is also strongly expressed by EBV-transformed B lymphoblasts. In addition, CD23 is present on a large variety of other cells, such as T cells, eosinophils, platelets, Langerhans' cells and a subset of thymic epithelial cells. CD19 is a pan-B-cell antigen that is expressed by B lymphocytes at all stages of maturation excepting differentiated plasma cells. Antibodies to CD19 are considered essential for the initial evaluation of acute and chronic lymphoproliferative disorders.
Recommended control reagent is Dako Code X7902.

Monoclonal Mouse Anti-Human
CD1a/FITC +
CD7/RPE +
CD3/APC

Clones: NA1/34, CBC.37 and UCHT1
Isotypes: IgG2a, kappa, IgG2b, kappa and IgG1, kappa

CE TC681 FITC, RPE and APC. Purified 50 tests, 1 mL

TC681 allows simultaneous detection and enumeration of cells expressing CD1a, CD7 and CD3. Antibodies to CD1a may be a useful tool for identification of Langerhans' cell histiocytosis and for the classification of thymomas and malignancies of T-cell precursors. CD7 is expressed by immature and mature T cells, and antibodies to CD7 are considered essential for the initial evaluation of T-cell acute lymphoblastic leukemias (T-ALL) and T-cell chronic leukemias together with a panel of other antibodies. CD3 is a pan-T-cell restricted antigen, which is a valuable marker for normal and neoplastic T cells.
Recommended control reagent is Dako Code X7900.

Monoclonal Mouse Anti-Human
CD2/FITC +
CD7/RPE +
CD3/APC

Clones: MT910, CBC.37 and UCHT1
Isotypes: IgG1, kappa, IgG2b, kappa and IgG1, kappa

CE TC677 FITC, RPE and APC. Purified 50 tests, 1 mL

TC677 allows simultaneous detection and enumeration of T cell subpopulations. CD2 is a useful marker in the assessment of lymphoid malignancies as it is expressed in the majority of precursor and postthymic lymphomas and leukemias. In some neoplastic T-cell populations, e.g. in peripheral T-cell lymphomas, CD2 may be aberrantly deleted. CD7 is expressed on mature T cells and anti-CD7 is considered essential for the initial evaluation of T-cell acute lymphoblastic leukemias (T-ALL) and T-cell chronic leukemias together with a panel of other antibodies. CD3 is a pan-T-cell restricted antigen and is a valuable marker for normal and neoplastic T cells.
Recommended control reagent is Dako Code X0980.

Monoclonal Mouse Anti-Human
CD2/FITC +
CD34/RPE +
CD5/APC

Clones: MT910, BIRMA-K3 and DK23
Isotypes: IgG1, kappa, IgG1, kappa and IgG1, kappa

CE TC666 FITC, RPE and APC. Purified 50 tests, 1 mL

TC666 allows simultaneous detection and enumeration of CD2+ T cells, CD34+ cells and CD5+ B cells.
Recommended control reagent is Dako Code X0978.

Monoclonal Mouse Anti-Human
CD3/FITC +
CD19/RPE +
CD45/APC

Clones: UCHT1, HD37 and 2D1
Isotypes: IgG1, kappa, IgG1, kappa and IgG1, kappa

CE TC690 FITC, RPE and APC. Purified 50 tests, 1 mL

TC690 allows simultaneous detection and enumeration of CD3-positive T cells and CD19-positive B cells in combination with CD45-positive leucocytes. CD3 is a pan-T-cell restricted antigen, which is a valuable marker for normal and neoplastic T cells. CD19 is the broadest lineage-specific surface marker for B cells and it is present on the surface of virtually all B lymphocytes, including early B progenitor cells. CD19 expression is maintained in B-lineage cells that have undergone neoplastic transformation. Antibodies to CD19 are considered essential for the initial evaluation of acute and chronic lymphoproliferative disorders. CD45 is one of the most abundant leucocyte cell surface glycoproteins and is expressed exclusively on cells of the hematopoietic system and their progenitors. Anti-CD45, together with a panel of other antibodies, is considered essential for the initial evaluation of chronic lymphoproliferative disorders and acute leukemias.
Recommended control reagent is Dako Code X0978.

Monoclonal Mouse Anti-Human
CD5/FITC +
CD10/RPE +
CD19/APC

Clones: DK23, SS2/36 and HD37
Isotypes: IgG1, kappa, IgG1, kappa and IgG1, kappa

CE TC664 FITC, RPE and APC. Purified 50 tests, 1 mL

TC664 allows simultaneous detection and enumeration of CD5+ T cells, CD10+ cells and CD19+ B cells.
Recommended control reagent is Dako Code X0978.

Monoclonal Mouse Anti-Human
CD8/FITC +
CD4/RPE +
CD3/APC

Clones: DK25, MT310 and UCHT1
Isotypes: IgG1, kappa, IgG1, kappa and IgG1, kappa

CE TC660 FITC, RPE and APC. Purified 50 tests, 1 mL

TC660 is intended for identification of the relative percentages of CD4 and CD8-positive T cells.
Recommended control reagent is Dako Code X0978.

Monoclonal Mouse Anti-Human
CD13/FITC +
HLA-DR Antigen/RPE +
CD117/APC

Clones: WM-47, AB3 and 104D2
Isotypes: IgG1, kappa, IgG2a, kappa and IgG1, kappa

CE TC685 FITC, RPE and APC. Purified 50 tests, 1 mL

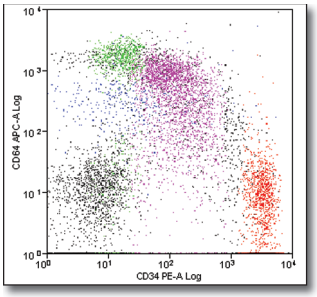
TC685 allows simultaneous detection and enumeration of cells expressing CD13, HLA-DR antigen and CD117. CD13 is expressed on the surface of committed granulocyte-monocyte progenitors (CFU-GM) and by cells of the granulocyte and monocyte lineages at all stages of differentiation, as well as by neoplastic counterparts of these cells. The HLA-DR antigen is constitutively expressed on antigen-presenting cells, such as B lymphocytes, monocytes and dendritic cells, but it can also be detected on activated T lymphocytes and activated granulocytes. The antigen has been found expressed in cases of different types of acute lymphoblastic leukemias, acute myeloid leukemias (AML) except AML-M3, chronic T-cell leukemias, chronic myeloid leukemias (CML) and B and T-cell non-Hodgkin's leukemias. CD117 is a marker for tissue mast cells, hematopoietic stem cells, and progenitor cells in normal human bone marrow. The majority of CD117+ marrow cells co-express CD34 and comprise progenitor cells and their precursors of all hematopoietic lineages. Antibodies to CD117, together with a panel of other antibodies, are useful for identification of AML, and for classification of leukemias.
TC685 is not intended for tissue typing.
Recommended control reagent is Dako Code X7904.

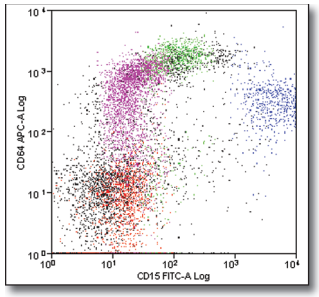
Monoclonal Mouse Anti-Human
CD15/FITC +
CD34/RPE +
CD64/APC

Clones: C3D-1, BIRMA-K3 and 10.1
Isotypes: IgM, kappa, IgG1, kappa and IgG1, kappa

CE TC688 FITC, RPE and APC. Purified 50 tests, 1 mL

TC688 allows simultaneous detection and enumeration of cells expressing CD15, CD34 and CD64. CD15 is expressed mainly on mature granulocytes and monocytes but also on immature bone marrow cells and on leukemic cells of the myelo-monocytic lineage. Additionally, CD15 is expressed in rare cases of acute lymphoblastic leukemia (ALL), and on adenocarcinoma cells and immature epithelial cells. CD34 is present on human hematopoietic progenitor cells in bone marrow and blood, whereas CD34 is normally not detected on peripheral blood leucocytes and platelets. Approximately 60% of acute B-lymphoid leukemias, 40% of acute myeloid leukemias (AML), and 1-5% of acute T-lymphoid leukemias express CD34. Chronic lymphoid leukemias, lymphomas and multiple myelomas have been found to be uniformly CD34 negative. CD64 is constitutively expressed on monocytes, macrophages and blood dendritic cells, and at very low levels on neutrophils. CD64 is expressed in acute myeloid leukemia with monocytic differentiation (M4 and M5) and in acute promyelocytic leukemia (M3).
Recommended control reagent is Dako Code X7902.
The two illustrations show bone marrow from a case of acute myelomonocytic leukemia stained with TC688. Immature blasts (CD34+CD15-CD64-) are shown in red. Partly differentiated cells (intermediate CD34+intermediate CD64+) are shown in magenta. The most mature cells (CD34-CD64+) are shown in green. Cells with granulocytic differentiation (CD15+intermediate CD64+) are shown in blue. Courtesy of professor Peter Hokland.





Monoclonal Mouse Anti-Human
CD16/FITC +
CD56/RPE +
CD3/APC

Clones: DJ130c, C5.9 and UCHT1
Isotypes: IgG1, kappa, IgG2b, kappa and IgG1, kappa

CE TC661 FITC, RPE and APC. Purified 50 tests, 1 mL

TC661 allows simultaneous detection and enumeration of NK cells and T cells.
Recommended control reagent is Dako Code X0980.

Monoclonal Mouse Anti-Human
CD19/FITC +
CD10/RPE +
CD45/APC

Clones: HD37, SS2/36 and 2D1
Isotypes: IgG1, kappa, IgG1, kappa and IgG1, kappa

CE TC676 FITC, RPE and APC. Purified 50 tests, 1 mL

TC676 allows simultaneous detection and enumeration of cells expressing CD19, CD10 and CD45. CD19 is the broadest lineage-specific surface marker for B cells and it is present on the surface of virtually all B lymphocytes, including early B progenitor cells. CD19 expression is maintained in B-lineage cells that have undergone neoplastic transformation. Antibodies to CD19 are considered essential for the initial evaluation of acute and chronic lymphoproliferative disorders. CD10 is expressed by neoplastic cells in human common acute lymphoblastic leukemia and antibodies to CD10 are useful for the subclassification of B-lineage leukemias. CD10 can also be found on other types of leukemic cells. CD45 is one of the most abundant leucocyte cell surface glycoproteins and is expressed exclusively on cells of the hematopoietic system and their progenitors. Anti-CD45, together with a panel of other antibodies, is considered essential for the initial evaluation of chronic lymphoproliferative disorders and acute leukemias.
Recommended control reagent is Dako Code X0978.

Monoclonal Mouse Anti-Human
CD19/FITC +
CD34/RPE +
CD22/APC

Clones: HD37, BIRMA-K3 and 4KB128
Isotypes: IgG1, kappa, IgG1, kappa and IgG1, kappa

CE TC689 FITC, RPE and APC. Purified 50 tests, 1 mL

TC689 allows simultaneous detection and enumeration of cells expressing CD19, CD34 and CD22. CD19 is the broadest lineage-specific surface marker for B cells and it is present on the surface of virtually all B lymphocytes, including early B progenitor cells. CD19 expression is maintained in B-lineage cells that have undergone neoplastic transformation. Antibodies to CD19 are considered essential for the initial evaluation of acute and chronic lymphoproliferative disorders. CD34 is present on hematopoietic progenitor cells in bone marrow and blood, whereas CD34 is normally not detected on peripheral blood leucocytes and platelets. Approximately 60% of acute B-lymphoid leukemias, 40% of acute myeloid leukemias (AML), and 1-5% of acute T-lymphoid leukemias express CD34. Chronic lymphoid leukemias, lymphomas and multiple myelomas have been found to be uniformly CD34 negative. CD22 is expressed on normal and neoplastic B lymphocytes in bone marrow and blood. CD22 is present in neoplasms of B-cell origin, including primitive lymphomas that lack monoclonal surface immunoglobulins, and most cases of common acute lymphoblastic leukemia.
Recommended control reagent is Dako Code X0978.

MultiMix™ Triple-Color Reagents (continued)

Monoclonal Mouse Anti-Human
CD19/FITC +
CD34/RPE +
CD45/APC

Clones: HD37, BIRMA-K3 and 2D1
Isotypes: IgG1, kappa, IgG1, kappa and IgG1, kappa

CE TC672 FITC, RPE and APC. Purified 50 tests, 1 mL

TC672 allows simultaneous detection and enumeration of cells expressing CD19, CD34 and CD45. CD19 is the broadest lineage-specific surface marker for B cells and it is present on the surface of virtually all B lymphocytes, including early B progenitor cells. CD19 expression is maintained in B-lineage cells that have undergone neoplastic transformation. Antibodies to CD19 are considered essential for the initial evaluation of acute and chronic lymphoproliferative disorders. CD34 is a useful marker for stem and progenitor cells as well as for the subclassification of leukemias. CD45 is one of the most abundant leucocyte cell surface glycoproteins and is expressed exclusively on cells of the hematopoietic system and their progenitors. Anti-CD45, together with a panel of other antibodies, is considered essential for the initial evaluation of chronic lymphoproliferative disorders and acute leukemias.
Recommended control reagent is Dako Code X0978.

Monoclonal Mouse Anti-Human
CD19/FITC +
CD56/RPE +
CD3/APC

Clones: HD37, C5.9 and UCHT1
Isotypes: IgG1, kappa, IgG2b, kappa and IgG1, kappa

CE TC662 FITC, RPE and APC. Purified 50 tests, 1 mL

TC662 allows simultaneous detection and enumeration of B cells, NK cells and T cells.
Recommended control reagent is Dako Code X0978.

Monoclonal Mouse Anti-Human
CD19/FITC +
Polyclonal Rabbit Anti-Human
Lambda Light Chains/RPE +
Kappa Light Chains/APC

Clone: HD37
Isotype: IgG1, kappa

CE TC669 FITC. Purified; RPE and APC. Affinity-isolated $F(ab')_2$ 50 tests, 1 mL

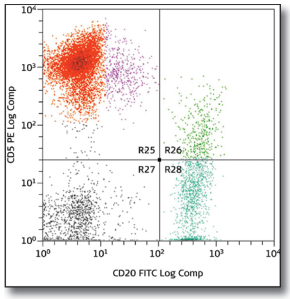
TC669 allows simultaneous detection and enumeration of kappa and lambda light chain bearing B cells.
Recommended control reagent is Dako Code X0979.

Monoclonal Mouse Anti-Human
CD20/FITC +
CD5/RPE +
CD19/APC

Clones: B-Ly1, DK23 and HD37
Isotypes: IgG1, kappa, IgG1, kappa and IgG1, kappa

CE TC663 FITC, RPE and APC. Purified 50 tests, 1 mL

TC663 allows simultaneous detection and enumeration of CD19+ and/or CD20+ B cells and CD5+ T cells.
Recommended control reagent is Dako Code X0978.



Normal peripheral blood stained with TC663, Monoclonal Mouse Anti-Human CD20/FITC + CD5/RPE + CD19/APC. The sample is gated on lymphocytes on an FSC/SSC dot plot. The orange population is the CD5+ T cells and the magenta population shows the CD5+CD20^{dim} T cells.

Monoclonal Mouse Anti-Human
CD33/FITC +
CD34/RPE +
CD117/APC

Clones: WM-54, BIRMA-K3 and 104D2
Isotypes: IgG1, kappa, IgG1, kappa and IgG1, kappa

CE TC686 FITC, RPE and APC. Purified 50 tests, 1 mL

TC686 allows simultaneous detection and enumeration of CD33, CD34 and CD117-positive cells. CD33 is expressed by subsets of myeloid progenitors, monocytes, granulocytic precursors, and at low levels by neutrophils. CD33 has been found on the cell surface of leukemic blasts from the vast majority of cases of acute myeloid leukemia (AML). CD34 expression is confined to lymphohematopoietic progenitor cells, with the exception of capillary endothelial cells. CD34 appears to be expressed at the highest levels on the earliest progenitors, and to decrease progressively with maturation. Approximately 60% of acute B-lymphoid leukemias, 40% of AML and 1-5% of acute T-lymphoid leukemias express CD34. CD117 is a marker for hematopoietic stem and progenitor cells, and tissue mast cells. The majority (50-70%) of CD117-positive cells co-express CD34 and comprise progenitor cells and their precursors of all hematopoietic lineages. CD117 is frequently found to be expressed on blasts of patients with AML, but is absent from ALL blasts.
Recommended control reagent is Dako Code X0978.

Monoclonal Mouse Anti-Human
CD38/FITC +
CD56/RPE +
CD19/APC

Clones: AT13/5, C5.9 and HD37
Isotypes: IgG1, kappa, IgG2b, kappa and IgG1, kappa

CE TC674 FITC, RPE and APC. Purified 50 tests, 1 mL

TC674 allows simultaneous detection and enumeration of plasma cells, NK cells and B cells. CD38 is a plasma cell marker, and anti-CD38 is useful for the identification of poorly differentiated plasma cells, which may mimick other blastic lymphoid cells. Additionally anti-CD38 is valuable for the immunophenotyping of acute leukemias. CD56 is the prototypic marker of human NK cells, and it is also expressed by a subset of CD4+ and CD8+ T cells in peripheral blood. CD19 is the broadest lineage-specific surface marker for B cells, and its expression is maintained in B-lineage cells that have undergone neoplastic transformation. Anti-CD19 is considered essential for the initial evaluation of acute and chronic lymphoproliferative disorders.
Recommended control reagent is Dako Code X0980.

Monoclonal Mouse Anti-Human
CD38/FITC +
CD56/RPE +
CD45/APC

Clones: AT13/5, C5.9 and 2D1
Isotypes: IgG1, kappa, IgG2b, kappa and IgG1, kappa

CE TC671 FITC, RPE and APC. Purified 50 tests, 1 mL

TC671 allows simultaneous detection and enumeration of CD38 and CD56-positive cells in combination with CD45-positive leucocytes. CD38 is a useful marker in the immunophenotyping of acute leukemias. Additionally, antibodies to CD38 are valuable for the identification of plasma cells, as poorly differentiated plasma cells may mimick other blastic lymphoid cells. CD56 is the prototypic marker of natural killer (NK) cells and it is also present on a subset of CD4+ and CD8+ T cells in peripheral blood. CD45 is one of the most abundant leucocyte cell surface glycoproteins and is expressed exclusively on cells of the hematopoietic system and their progenitors. Anti-CD45, together with a panel of other antibodies, is considered essential for the initial evaluation of chronic lymphoproliferative disorders and acute leukemias.
Recommended control reagent is Dako Code X0980.

Monoclonal Mouse Anti-Human
CD41/FITC +
CD34/RPE +
CD61/APC

Clones: 5B12, BIRMA-K3 and Y2/51
Isotypes: IgG1, kappa, IgG1, kappa and IgG1, kappa

CE TC687 FITC, RPE and APC. Purified 50 tests, 1 mL

TC687 allows simultaneous detection and enumeration of CD41 and CD61-positive platelets and CD34-positive progenitor cells. CD41 and CD61 are selective markers of platelets and platelet precursors, and they may be of value for immunophenotyping of megakaryoblastic leukemias. The CD41/CD61 complex appears early in megakaryocyte maturation. The activated CD41/CD61 complex is a receptor for von Willebrand factor, soluble fibrinogen and fibronectin and plays a central role in platelet activation and aggregation. CD34 is present on hematopoietic progenitor cells in bone marrow and blood, whereas CD34 is normally not detected on peripheral blood leucocytes and platelets. Approximately 60% of acute B-lymphoid leukemias, 40% of acute myeloid leukemias (AML), and 1-5% of acute T-lymphoid leukemias express CD34. Chronic lymphoid leukemias, lymphomas and multiple myelomas have been found to be uniformly CD34-negative.
Recommended control reagent is Dako Code X0978.

Monoclonal Mouse Anti-Human
CD43/FITC +
CD79β/RPE +
CD19/APC

Clones: DF-T1, SN8 and HD37
Isotypes: IgG1, kappa, IgG1, kappa and IgG1, kappa

CE TC684 FITC, RPE and APC. Purified 50 tests, 1 mL

TC684 allows simultaneous detection and enumeration of CD43, CD79β and CD19-positive cells. CD43 is expressed by normal and neoplastic T cells and by myeloid-lineage cells. A small number of B-cell leukemias and lymphomas, usually of the small cell type, e.g. B-cell chronic lymphocytic leukemia and/or centrocytic lymphoma, may also express the antigen. Impaired CD43 expression on lymphocytes is a hallmark of the Wiskott-Aldrich syndrome. CD79β expression is restricted to the B-cell lineage, and is found in pro-B cells before Ig heavy-chain gene rearrangement but after CD79α expression. In contrast to CD79α, CD79β expression persists to the latest stage of B-cell development, and, furthermore, CD79β expression increases upon B-cell activation. CD79β is also expressed in B-cell neoplasms, with an incidence of approximately 80%. In CLL/SLL (chronic lymphocytic leukemia/small lymphocytic lymphoma), however, CD79β expression is negative in the majority of the cases. CD19 is a pan-B-cell antigen and is expressed by B lymphocytes at all stages of maturation excepting differentiated plasma cells. Antibodies to CD19 are considered essential for the initial evaluation of acute and chronic lymphoproliferative disorders.
Recommended control reagent is Dako Code X0978.

Monoclonal Mouse Anti-Human
CD57/FITC +
CD7/RPE +
CD3/APC

Clones: TB01, CBC.37 and UCHT1
Isotypes: IgM, kappa, IgG2b, kappa and IgG1, kappa

CE TC678 FITC, RPE and APC. Purified 50 tests, 1 mL

TC678 allows simultaneous detection and enumeration of CD3 and CD7-positive T cell subsets in combination with CD57-positive natural killer (NK) cells. Anti-CD57 is useful for evaluation of lymphoproliferative disorders, especially large granular lymphocyte leukemia. CD7 is expressed on mature T cells and anti-CD7 is considered essential for the initial evaluation of T-cell acute lymphoblastic leukemias (T-ALL) and T-cell chronic leukemias. Anti-CD57 and anti CD7 should be used together with a panel of other antibodies. CD3 is a pan-T-cell restricted antigen, which is a valuable marker for normal and neoplastic T cells.
Recommended control reagent is Dako Code X7901.

Monoclonal Mouse Anti-Human
CD57/FITC +
CD8/RPE +
CD3/APC

Clones: TB01, DK25 and UCHT1
Isotypes: IgM, kappa, IgG1, kappa and IgG1, kappa

CE TC680 FITC, RPE and APC. Purified 50 tests, 1 mL

TC680 allows simultaneous detection and enumeration of CD3 and CD8-positive T cell subsets in combination with CD57-positive natural killer (NK) cells. CD57 is useful for evaluation of lymphoproliferative disorder, especially large granular lymphocyte leukemia, when used together with a panel of other antibodies. CD57 was originally identified as a natural killer (NK) cell marker, but it is not restricted to NK cells, being shared by cells belonging to different lineages. Measurement of the relative as well as the absolute number of CD8-positive cells in peripheral blood is critically important in assessing the immunological status of a patient. Additionally, CD8 has an important role in the immunophenotypic analysis of reactive and neoplastic populations of T cells. CD3 is a pan-T-cell restricted antigen, which is a valuable marker for normal and neoplastic T cells.
Recommended control reagent is Dako Code X7902.

Monoclonal Mouse Anti-Human
CD57/FITC +
CD56/RPE +
CD3/APC

Clones: TB01, C5.9 and UCHT1
Isotypes: IgM, kappa, IgG2b, kappa and IgG1, kappa

CE TC679 FITC, RPE and APC. Purified 50 tests, 1 mL

TC679 allows simultaneous detection and enumeration of cells expressing CD57, CD56 and CD3. Anti-CD57 is useful for evaluation of lymphoproliferative disorders, especially large granular lymphocyte leukemia, when used in combination with a panel of other antibodies. CD56 is the prototypic marker of human NK cells, and it is also expressed by a subset of CD4+ and CD8+ T cells in peripheral blood. CD3 is a pan-T-cell restricted antigen, which is a valuable marker for normal and neoplastic T cells.
Recommended control reagent is Dako Code X7901

Monoclonal Mouse Anti-Human
CD61/FITC +
CD235a/RPE +
CD45/APC

Clones: Y2/51, JC159 and 2D1
Isotypes: IgG1, kappa, IgG1, kappa and IgG1, kappa

CE TC673 FITC, RPE and APC. Purified 50 tests, 1 mL

TC673 allows simultaneous detection and enumeration of cells expressing CD61, CD235a and CD45. CD61 is a selective marker of platelets and platelet precursors, and it may be of value for immunophenotyping of megakaryoblastic leukemias. CD235a (glycophorin A) is expressed on erythroid cells beginning on morphologically recognizable erythroid precursors, just after the CFU-E stage, to the mature erythrocyte. The majority of cases of erythroleukemia express CD235a on neoplastic erythroblasts, whereas acute myeloid leukemia and acute lymphoblastic leukemia only very rarely express CD235a. CD45 is one of the most abundant leucocyte cell surface glycoproteins and is expressed exclusively on cells of the hematopoietic system and their progenitors. Anti-CD45, together with a panel of other antibodies, is considered essential for the initial evaluation of chronic lymphoproliferative disorders and acute leukemias.
Recommended control reagent is Dako Code X0978.

Monoclonal Mouse Anti-Human
CD71/FITC +
CD235a/RPE +
CD45/APC

Clones: Ber-T9, JC159 and 2D1
Isotypes: IgG1, kappa, IgG1, kappa and IgG1, kappa

CE TC675 FITC, RPE and APC. Purified 50 tests, 1 mL

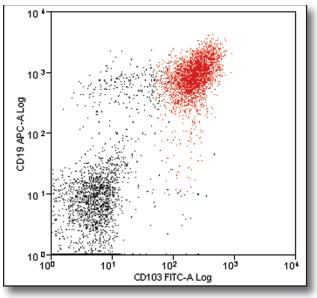
TC675 allows simultaneous detection and enumeration of cells expressing CD71, CD235a and CD45. In normal tissues, high expression of CD71 (transferrin receptor) is seen in erythroid precursors and hemoglobin-synthesizing reticulocytes but expression is lost in mature erythrocytes. Activated, but not resting, lymphocytes express CD71. Anti-CD71, together with a panel of other antibodies, is considered relevant for the initial evaluation of acute leukemias of the erythroid lineage. CD235a (glycophorin A) is expressed on erythroid cells beginning on morphologically recognizable erythroid precursors, just after the CFU-E stage, to the mature erythrocyte. The majority of cases of erythroleukemia express CD235a on neoplastic erythroblasts, whereas acute myeloid leukemia and acute lymphoblastic leukemia only very rarely express CD235a. CD45 is one of the most abundant leucocyte cell surface glycoproteins and is expressed exclusively on cells of the hematopoietic system and their progenitors. Anti-CD45, together with a panel of other antibodies, is considered essential for the initial evaluation of chronic lymphoproliferative disorders and acute leukemias.
Recommended control reagent is Dako Code X0978.

Monoclonal Mouse Anti-Human
CD103/FITC +
CD11c/RPE +
CD19/APC

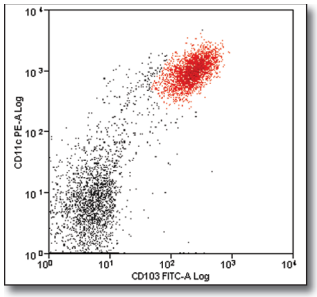
Clones: Ber-ACT8, KB90 and HD37
Isotypes: IgG1, kappa, IgG1, kappa and IgG1, kappa

CE TC665 FITC, RPE and APC. Purified 50 tests, 1 mL

TC665 allows simultaneous detection and enumeration of cells expressing CD103, CD11c and CD19. CD103 is expressed on mucosal T cells, on activated CD8+ T cells and on hairy cell leukemia cells. In several malignant conditions, such as T-cell lymphomas and hairy cell leukemias, the cells express CD103. Antibodies to CD103 are valuable for the evaluation of chronic B-cell leukemias and T-cell lymphomas. CD11c is expressed on a variety of cells including granulocytes, monocytes, macrophages, natural killer (NK) cells, dendritic cells and neoplastic cells. Antibodies to CD11c are useful for the initial evaluation of B-cell lymphoproliferative disorders, e.g. hairy cell leukemia and B-cell chronic lymphocytic leukemia. CD19 is the broadest lineage-specific surface marker for B cells and it is present on the surface of virtually all B lymphocytes, including early B progenitor cells. CD19 expression is maintained in B-lineage cells that have undergone neoplastic transformation. Antibodies to CD19 are considered essential for the initial evaluation of acute and chronic lymphoproliferative disorders.
Recommended control reagent is Dako Code X0978.



Peripheral blood from a case of hairy cell leukemia stained with TC665. Hairy cell leukemia cells (CD11c+CD19+CD103+) are shown in red. Courtesy of professor Peter Hokland.

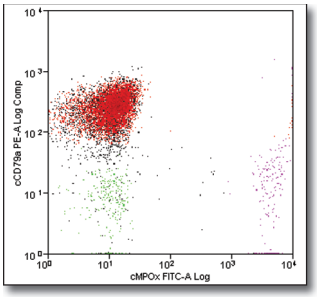


Monoclonal Mouse Anti-Human
MPO/FITC +
CD79αcy/RPE +
CD3/APC

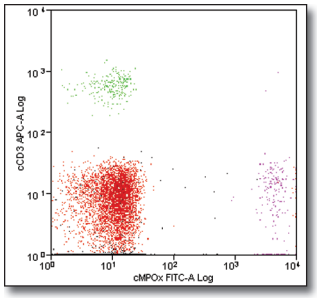
Clones: MPO-7, HM57 and UCHT1
Isotypes: IgG1, kappa, IgG1, kappa and IgG1, kappa

CE TC667 FITC, RPE and APC. Purified 50 tests, 1 mL

TC667 allows simultaneous detection and enumeration of granulocytes, B cells and T cells.
Recommended control reagent is Dako Code X0978.



Bone marrow from a case of B-cell acute lymphoblastic leukemia (B-ALL) stained with TC667. B-ALL cells (CD79αcy+) are shown in red. Normal myeloid cells (MPO+) are shown in magenta. Normal T cells (CD3+) are shown in green. Courtesy of professor Peter Hokland.



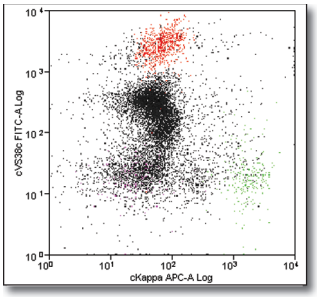
MultiMix™ Triple-Color Reagents (continued)

Monoclonal Mouse Anti-Human
Plasma Cell/FITC +
Polyclonal Rabbit Anti-Human
Lambda Light Chains/RPE +
Kappa Light Chains/APC

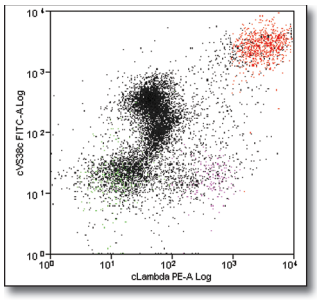
Clone: VS38c
Isotype: IgG1, kappa

CE TC670 FITC. Purified; RPE and APC. Affinity-isolated F(ab')$_2$ — 50 tests, 1 mL

TC670 allows simultaneous intracellular detection and enumeration of kappa and lambda light chains in plasma cells.
Recommended control reagent is Dako Code X0979.



Bone marrow from a case of multiple myeloma stained with TC670. The multiple myeloma cells (VS38c+lambda+) are shown in red. Normal B cells (kappa+ or lambda+) are shown in green and magenta, respectively. Courtesy of professor Peter Hokland.



Monoclonal Mouse Anti-Human
TdT/FITC +
CD22/RPE +
CD3/APC

Clones: HT-6, 4KB128 and UCHT1
Isotypes: IgG1, kappa, IgG1, kappa and IgG1, kappa

CE TC668 FITC, RPE and APC. Purified — 50 tests, 1 mL

TC668 allows simultaneous detection and enumeration of T and B-lymphocyte precursor cells, B cells and T cells.
Recommended control reagent is Dako Code X0978.

Monoclonal Mouse Anti-Human
TdT/FITC +
Polyclonal Rabbit Anti-Human
IgM/RPE +
Monoclonal Mouse Anti-Human
CD79αcy/APC

Clones: HT-6 and HM57
Isotypes: IgG1, kappa and IgG1, kappa

CE TC682 FITC and APC. Purified; RPE. Affinity-isolated F(ab')$_2$ — 50 tests, 1 mL

TC682 is intended for the simultaneous detection and enumeration of cells containing intracellular terminal deoxynucleotidyl transferase (TdT), IgM and CD79αcy. TdT is present in the nuclei of normal T and B lymphocyte precursors and their neoplastic equivalents. Most cases of acute lymphoblastic leukemia (ALL) and 37% of acute myeloid leukemia (AML) cases are TdT positive. Antibodies to IgM, when applied in concert with a panel of other antibodies, are useful for the subtyping of pre-B-cell acute lymphoblastic leukemia (pre-B-ALL), B-cell acute lymphoblastic leukemia (B-ALL) and B-cell chronic lymphoproliferative disorders. Expression of CD79 is largely restricted to B-lineage cells. CD79αcy is found in the cytoplasm of pro-B cells before Ig heavy-chain rearrangement, and is extinguished in terminally differentiated plasma cells. Cytoplasmic CD79α is expressed in pre-pre-B-ALL, common-ALL, pre-B-ALL and B-ALL.
Recommended control reagent is Dako Code X7903.

FITC/RPE/RPE-Cy5 Reagent Line

Monoclonal Mouse Anti-Human
CD3/FITC +
CD4/RPE +
CD45/RPE-Cy5

Clones: UCHT1, MT310 and T29/33
Isotypes: IgG1, kappa, IgG1, kappa and IgG1, kappa

CE TC646 FITC, RPE and RPE-Cy5. Purified — 50 tests, 0.5 mL

TC646 allows simultaneous detection and enumeration of T cells, the helper/inducer T-cell subset, and CD45+ cells.
Recommended control reagent is Dako Code X0964.

Monoclonal Mouse Anti-Human
CD3/FITC +
CD8/RPE +
CD45/RPE-Cy5

Clones: UCHT1, DK25 and T29/33
Isotypes: IgG1, kappa, IgG1, kappa and IgG1, kappa

CE TC647 FITC, RPE and RPE-Cy5. Purified — 50 tests, 0.5 mL

TC647 allows simultaneous detection and enumeration of T cells, the suppressor/cytotoxic T-cell subset, and CD45+ cells.
Recommended control reagent is Dako Code X0964.

Monoclonal Mouse Anti-Human
CD3/FITC +
CD19/RPE +
CD45/RPE-Cy5

Clones: UCHT1, HD37 and T29/33
Isotypes: IgG1, kappa, IgG1, kappa and IgG1, kappa

CE TC649 FITC, RPE and RPE-Cy5. Purified — 50 tests, 0.5 mL

TC649 allows simultaneous detection and enumeration of T cells, B cells, and CD45+ cells.
Recommended control reagent is Dako Code X0964.

Monoclonal Mouse Anti-Human
CD4/FITC +
CD8/RPE +
CD3/RPE-Cy5

Clones: MT310, DK25 and UCHT1
Isotypes: IgG1, kappa, IgG1, kappa and IgG1, kappa

CE TC654 FITC, RPE and RPE-Cy5. Purified — 100 tests, 1 mL

TC654 allows simultaneous enumeration of T cells and the suppressor/cytotoxic and helper/inducer T-cell subset.
Recommended control reagent is Dako Code X0956.

MultiMix™ Triple-Color Reagents (continued)

Monoclonal Mouse Anti-Human
CD8/FITC +
CD4/RPE +
CD3/RPE-Cy5

Clones: DK25, MT310 and UCHT1
Isotypes: IgG1, kappa, IgG1, kappa and IgG1, kappa

CE TC641 FITC, RPE and RPE-Cy5. Purified 50 tests, 0.5 mL

TC641 allows simultaneous detection and enumeration of T cells, and the suppressor/cytotoxic and helper/inducer T-cell subsets.
Recommended control reagent is Dako Code X0956.

Monoclonal Mouse Anti-Human
CD13/FITC +
CD14/RPE +
CD66abce/RPE-Cy5

Clones: WM-47, TÜK4 and Kat4c
Isotypes: IgG1, kappa, IgG2a, kappa and IgG1, kappa

CE TC652 FITC, RPE and RPE-Cy5. Purified 50 tests, 0.5 mL

TC652 allows simultaneous identification of immature (CD13+, CD14-, CD66abce-), intermediate (CD13+, CD14-, CD66abce+), and mature (CD13-, CD14-, CD66abce+) myelopoietic differentiation stages through the exclusion of CD14+ monocytic cells.
Recommended control reagent is Dako Code X0965.

Monoclonal Mouse Anti-Human
CD16/FITC +
CD19/RPE +
CD3/RPE-Cy5

Clones: DJ130c, HD37 and UCHT1
Isotypes: IgG1, kappa, IgG1, kappa and IgG1, kappa

CE TC655 FITC, RPE and RPE-Cy5. Purified 100 tests, 1 mL

TC655 allows simultaneous detection and enumeration of CD16+ NK cells, B cells and T cells.
Recommended control reagent is Dako Code X0956.

Polyclonal Rabbit Anti-Human
Kappa Light Chains/FITC +
Lambda Light Chains/RPE +
Monoclonal Mouse Anti-Human
CD19/RPE-Cy5

Clone: HD37
Isotype: IgG1, kappa

CE TC051 FITC and RPE. Affinity-isolated $F(ab')_2$; RPE-Cy5. Purified 50 tests, 0.5 mL

TC051 allows simultaneous detection and enumeration of kappa and lambda bearing B cells.
Recommended control reagent is Dako Code X0957.

Isotype Reagents

Isotype and fluorochrome-matched control reagents are important tools for assessing the specificity of immunological staining.

Dako mouse antibody controls are based on monoclonal mouse antibodies of different isotypes, and unless indicated otherwise, directed towards *Aspergillus niger* glucose oxidase, an enzyme which is neither present nor inducible in mammalian tissues. The controls are provided as conjugated, purified antibodies.

Dako rabbit antibody controls have been prepared from the serum of non-immunized rabbits. The controls have been processed in the same way as Dako's conjugated, solid-phase absorbed $F(ab')_2$ fragment rabbit antibodies.

Single-Color Isotype Reagents

Mouse IgG1

CE	X0968	APC. Purified	1 mL
RUO	X7908	CY. Purified	1 mL
CE	X0927	FITC. Purified	1 mL
RUO	X0987	PB. Purified	1 mL
CE	X7909	PerCP. Purified NEW	1 mL
CE	X0928	RPE. Purified	1 mL
CE	X0955	RPE-Cy5. Purified	1 mL

Flow cytometry control reagents for Dako Single-Color monoclonal mouse antibodies of isotype IgG1.

Mouse IgG2a

CE	X0933	FITC. Purified	1 mL
CE	X0950	RPE. Purified	1 mL

Flow cytometry control reagents for Dako Single-Color monoclonal mouse antibodies of isotype IgG2a.

Mouse IgG2b

CE	X0941	FITC. Purified	1 mL
CE	X0951	RPE. Purified	1 mL

Flow cytometry control reagents for Dako Single-Color monoclonal mouse antibodies of isotype IgG2b.

Mouse IgM

CE	X0934	FITC. Purified	1 mL

Flow cytometry control reagent for Dako monoclonal mouse FITC-conjugated antibodies of isotype IgM.

Rabbit $F(ab')_2$

CE	X0998	APC. Solid-phase absorbed $F(ab')_2$	1 mL
CE	X0929	FITC. Solid-phase absorbed $F(ab')_2$	1 mL
CE	X0930	RPE. Solid-phase absorbed $F(ab')_2$	1 mL

Flow cytometry control reagents for Dako Single-Color solid-phase absorbed APC, FITC and RPE-conjugated rabbit antibodies provided as $F(ab)_2$ fragments.

MultiMix™ Dual-Color Isotype Reagents

Mouse IgG1/FITC + Mouse IgG1/RPE

CE	X0932	FITC and RPE. Purified	0.5 mL

Flow cytometry control reagent for Dako MultiMix™ Dual-Color Reagents of the composition: monoclonal mouse antibody isotype IgG1/FITC, and monoclonal mouse antibody isotype IgG1/RPE.

Mouse IgG1/FITC + Mouse IgG2a/RPE

CE	X0949	FITC and RPE. Purified	0.5 mL

Flow cytometry control reagent for Dako MultiMix™ Dual-Color Reagents of the composition: monoclonal mouse antibody isotype IgG1/FITC, and monoclonal mouse antibody isotype IgG2a/RPE.

Mouse IgG1/FITC + Mouse IgG2b/RPE

CE	X0981	FITC and RPE. Purified	0.5 mL

Flow cytometry control reagent for Dako MultiMix™ Dual-Color Reagents of the composition: monoclonal mouse antibody isotype IgG1/FITC, and monoclonal mouse antibody isotype IgG2b/RPE.

Rabbit $F(ab')_2$/FITC + Mouse IgG1/RPE

CE	X0952	FITC. Solid-phase absorbed $F(ab')_2$; RPE. Purified	0.5 mL

Flow cytometry control reagent for Dako MultiMix™ Dual-Color Reagents of the composition: solid-phase absorbed rabbit antibody $F(ab')_2$ fragment/FITC, and monoclonal mouse antibody isotype IgG1/RPE.

Rabbit $F(ab')_2$/FITC + Rabbit $F(ab')_2$/RPE

CE	X0935	FITC and RPE. Solid-phase absorbed $F(ab')_2$	0.5 mL

Flow cytometry control reagent for Dako MultiMix™ Dual-Color Reagents of the composition: solid-phase absorbed rabbit antibody $F(ab')_2$ fragment/FITC, and solid-phase absorbed rabbit antibody $F(ab')_2$ fragment/RPE.

MultiMix™ Triple-Color Isotype Reagents FITC/RPE/APC Reagent Line

Mouse IgG1/FITC +
Mouse IgG1/RPE +
Mouse IgG1/APC

CE X0978 FITC, RPE and APC. Purified 50 tests, 1 mL

Flow cytometry control reagent for Dako MultiMix™ Triple-Color Reagents of the composition: monoclonal mouse antibody isotype IgG1/FITC, monoclonal mouse antibody isotype IgG1/RPE, and monoclonal mouse antibody isotype IgG1/APC.

Mouse IgG1/FITC +
Mouse IgG2a/RPE +
Mouse IgG1/APC

CE X7904 FITC, RPE and APC. Purified 50 tests, 1 mL

Flow cytometry control reagent for Dako MultiMix™ Triple-Color Reagents of the composition: monoclonal mouse antibody isotype IgG1/FITC, monoclonal mouse antibody isotype IgG2a/RPE, and monoclonal mouse antibody isotype IgG1/APC.

Mouse IgG1/FITC +
Mouse IgG2b/RPE +
Mouse IgG1/APC

CE X0980 FITC, RPE and APC. Purified 50 tests, 1 mL

Flow cytometry control reagent for Dako MultiMix™ Triple-Color Reagents of the composition: monoclonal mouse antibody isotype IgG1/FITC, monoclonal mouse antibody isotype IgG2b/RPE and monoclonal mouse antibody isotype IgG1/APC.

Mouse IgG2a/FITC +
Mouse IgG2b/RPE +
Mouse IgG1/APC

CE X7900 FITC, RPE and APC. Purified 50 tests, 1 mL

Flow cytometry control reagent for Dako MultiMix™ Triple-Color Reagents of the composition: monoclonal mouse antibody isotype IgG2a/FITC, monoclonal mouse antibody isotype IgG2b/RPE and monoclonal mouse antibody isotype IgG1/APC.

Mouse IgM/FITC +
Mouse IgG1/RPE +
Mouse IgG1/APC

CE X7902 FITC, RPE and APC. Purified 50 tests, 1 mL

Flow cytometry control reagent for Dako MultiMix™ Triple-Color Reagents of the composition: monoclonal mouse antibody isotype IgM/FITC, monoclonal mouse antibody isotype IgG1/RPE and monoclonal mouse antibody isotype IgG1/APC.

Mouse IgM/FITC +
Mouse IgG2b/RPE +
Mouse IgG1/APC

CE X7901 FITC, RPE and APC. Purified 50 tests, 1 mL

Flow cytometry control reagent for Dako MultiMix™ Triple-Color Reagents of the composition: monoclonal mouse antibody isotype IgM/FITC, monoclonal mouse antibody isotype IgG2b/RPE and monoclonal mouse antibody isotype IgG1/APC.

Mouse IgG1/FITC +
Rabbit F(ab')$_2$/RPE +
Mouse IgG1/APC

CE X7903 FITC and APC. Purified; RPE. Solid-phase absorbed F(ab')$_2$ 50 tests, 1 mL

Flow cytometry control reagent for Dako MultiMix™ Triple-Color Reagents of the composition: monoclonal mouse antibody isotype IgG1/FITC, solid-phase absorbed rabbit antibody F(ab')$_2$ fragment/RPE, and monoclonal mouse antibody isotype IgG1/APC.

Mouse IgG1/FITC +
Rabbit F(ab')$_2$/RPE +
Rabbit F(ab')$_2$/APC

CE X0979 FITC, RPE and APC. Purified 50 tests, 1 mL

Flow cytometry control reagent for Dako MultiMix™ Triple-Color Reagents of the composition: monoclonal mouse antibody isotype IgG1/FITC, solid-phase absorbed rabbit antibody F(ab')$_2$ fragment/RPE, and solid-phase absorbed rabbit antibody F(ab')$_2$ fragment/APC.

MultiMix™ Triple-Color Isotype Reagents FITC/RPE/RPE-Cy5 Reagent Line

Mouse IgG1/FITC +
Mouse IgG1/RPE +
Mouse Anti-Human CD45/RPE-Cy5

Clones: DAK-GO1, DAK-GO1 and T29/33
Isotypes: IgG1, kappa, IgG1, kappa and IgG1, kappa

CE X0964 FITC, RPE and RPE-Cy5. Purified 0.5 mL

Flow cytometry control reagent for Dako MultiMix™ Triple-Color Reagents TC646, TC647 and TC649.

Mouse IgG1/FITC +
Mouse IgG1/RPE +
Mouse IgG1/RPE-Cy5

CE X0956 FITC, RPE and RPE-Cy5. Purified 0.5 mL

Flow cytometry control reagent for Dako MultiMix™ Triple-Color Reagents of the composition: monoclonal mouse antibody isotype IgG1/FITC, monoclonal mouse antibody isotype IgG1/RPE, and monoclonal mouse antibody isotype IgG1/RPE-Cy5.

Mouse IgG1/FITC +
Mouse IgG2a/RPE +
Mouse IgG1/RPE-Cy5

CE X0965 FITC, RPE and RPE-Cy5. Purified 0.5 mL

Flow cytometry control reagent for Dako MultiMix™ Triple-Color Reagents of the composition: monoclonal mouse antibody isotype IgG1/FITC, monoclonal mouse antibody isotype IgG2a/RPE, and monoclonal mouse antibody isotype IgG1/RPE-Cy5.

Rabbit F(ab')$_2$/FITC +
Rabbit F(ab')$_2$/RPE +
Mouse IgG1/RPE-Cy5

CE X0957 FITC and RPE. Solid-phase absorbed F(ab')$_2$; RPE-Cy5. Purified 0.5 mL

Flow cytometry control reagent for Dako MultiMix™ Triple-Color Reagents of the composition: solid-phase absorbed rabbit antibody F(ab')$_2$ fragment/FITC, solid-phase absorbed rabbit antibody F(ab')$_2$ fragment/RPE, and monoclonal mouse antibody isotype IgG1/ RPE-Cy5.

Secondary Antibody Conjugates and Streptavidin Conjugates

The reagents listed in this section have been tailored to provide optimal specific fluorescence and a very low non-specific background in indirect immunofluorescence techniques.

Polyclonal Goat Anti-
Mouse Immunoglobulins

CE	F0479	FITC. Affinity-isolated $F(ab')_2$	2 mL
CE	R0480	RPE. Affinity-isolated $F(ab')_2$	1 mL

Cross-reaction with human immunoglobulins and fetal calf serum has been removed by solid-phase absorption.

Polyclonal Rabbit Anti-
Mouse Immunoglobulins

CE	F0313	FITC. $F(ab')_2$	2 mL
CE	R0439	RPE. Affinity-isolated $F(ab')_2$	1 mL

Cross-reaction with human immunoglobulins and fetal calf serum has been removed by solid-phase absorption.

Polyclonal Swine Anti-
Rabbit Immunoglobulins

CE	F0054	FITC. Affinity-isolated $F(ab')_2$	1 mL

Cross-reaction with human immunoglobulins has been removed by solid-phase absorption.

Streptavidin

RUO	F0422	FITC	1 mL
RUO	R0438	RPE	1 mL

Apoptosis Kit

During apoptosis, cells expose phosphatidylserine at the cell surface. Annexin V is a phospholipid-binding protein, which in the presence of calcium ions binds selectively and with high affinity to phosphatidylserine. It displays very low affinity for phospholipid species such as phosphatidylethanolamine, sphingomyelin and phosphatidylcholine. This binding profile makes annexin V a powerful and selective tool for the detection of apoptotic cells. In several papers, the successful use of annexin V for the measurement of apoptosis of various cell types by flow cytometry has been described (1-3).

The APOPTEST™-FITC kit includes fluorescein-conjugated annexin V and the dye, propidium iodide, thus allowing separate identification of viable, apoptotic, and necrotic cells.

References:
1. Koopman G, Reutelingsperger CP, Kuijten GA, Keehnen RM, Pals ST, van Oers MH. Annexin V for flow cytometric detection of phosphatidylserine expression on B cells undergoing apoptosis. Blood 1994;84:1415-20.
2. Vermes I, Haanen C, Steffens-Nakken H, Reutelingsperger CP. A novel assay for apoptosis. Flow cytometric detection of phosphatidylserine expression on early apoptotic cells using fluorescein labeled annexin V. J Immunol Methods 1995;184:39-51.
3. Van Engeland M, Ramaekers FC, Schutte B, Reutelingsperger CP. A novel assay to measure loss of plasma membrane asymmetry during apoptosis of adherent cells in culture. Cytometry 1996;24:131-9.

APOPTEST™-FITC*

RUO	K2350	100 tests

APOPTEST™-FITC has been designed to measure apoptosis in a variety of suspended cell types by flow cytometry. The kit contains fluorescein-conjugated annexin V, propidium iodide and binding buffer. Cells suspended in binding buffer are mixed with the fluorescein-conjugated annexin V and propidium iodide. After incubation for 10 minutes, cells are ready for analysis.

The combination of annexin V/FITC and propidium iodide makes it possible to discriminate three distinct phenotypes: The non-apoptotic live cells that are unlabeled, the apoptotic cells that are labeled by annexin V/FITC, and the necrotic cells that are labeled by both annexin V/FITC and propidium iodide.

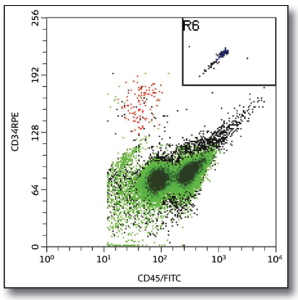
* Trade name of NEXINS Research, The Netherlands. European Patent 755,516 and U.S. Patent 5,834,196

CD34+ Cells, Enumeration Kit and Count Kit

CD34Count Kit

CE K2370 50 duplicate tests

CD34Count Kit has been designed to provide an optimal method for enumeration of CD34+ hematopoietic stem cells in human peripheral blood samples and leukapheresis samples from growth factor-stimulated individuals. The method follows the single-platform guidelines from The International Society for Hematotherapy and Graft Engineering (ISHAGE). The test is performed in duplicate by staining the sample with a Dual-Color Reagent composed of Anti-Human CD45/FITC and Anti-Human CD34/RPE. After staining of the sample, red blood cells are lysed with EasyLyse™, an ammonium chloride-based lysing reagent. Count control beads (CytoCount™) are added to the sample serving as an internal reference population. The addition of a known concentration of reference beads makes it possible to calculate the absolute number of CD34+ cells in the original specimen, i.e. to determine the number of CD34+ cells per µL of specimen. 7-amino-actinomycin D (7-AAD), which is also included in the kit, is added to the sample if viability measurement is required. 7-AAD binds to DNA, but is only able to diffuse into dead cells.

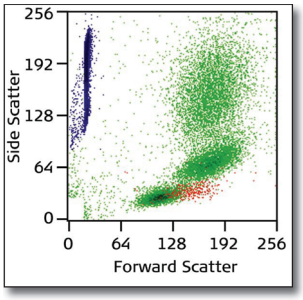


Leukapheresis sample. CD45/FITC vs. CD34/RPE. R6 is set around the CytoCount™ Beads. The red population is the CD34+ stem cells.

CytoCount™, Count Control Beads for Flow Cytometry

CE S2366 150 tests, 17 mL

CytoCount™, Count Control Beads are polystyrene fluorospheres that are used as a reference population for the direct determination of the absolute count of any leucocyte population of interest, e.g. for CD4 and CD34 enumeration. The reagent is suitable for blood and leukapheresis samples. CytoCount™, Count Control Beads are 5.2 µm in diameter and are excited by 488 nm lasers. Each fluorosphere contains dye that has a fluorescent emission range of 520 to 700 nm.



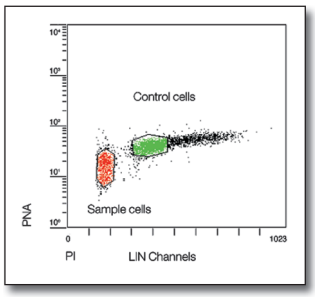
Normal peripheral blood with CytoCount™ Beads, Code S2366. A lyse-no-wash protocol is used. The purple population represents the CytoCount™ Beads.

Telomere PNA Kit

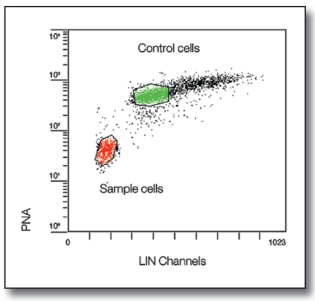
Telomere PNA Kit/FITC, for Flow Cytometry

RUO K5327 20 duplicate tests

Telomere PNA Kit/FITC for Flow Cytometry provides a convenient method for measuring telomeric sequences in vertebrate interphase hematopoietic cells. The kit contains reagents for 20 duplicate tests (40 single tests). In addition to the fluorescein-conjugated peptide nucleic acid (PNA) probe in hybridization solution, the kit contains hybridization solution without probe for correction of cell autofluorescence, wash solution for post-hybridization washes and DNA-staining solution for identification of $G_{0/1}$-cells. The kit has been designed so that post-hybridization washes are kept to a minimum and formamide washes are avoided. In a mixture of sample cells (provided by the user) and control cells (provided by the user), the sample DNA is denatured at 82 °C for 10 minutes in an Eppendorf tube in the presence of hybridization solution with or without fluorescein-conjugated PNA telomere probe. Then, hybridization takes place in the dark at room temperature overnight. The hybridization is followed by 2 washes in wash solution at 40 °C for 10 minutes each. Finally the cells are resuspended in DNA-staining solution and stored in the dark at 2-8 °C for 2-3 hours before analysis by flow cytometry. The specific fluorescence from telomere staining will be observed in FL1, and fluorescence from DNA staining will be observed in FL3. Compared with the traditional telomere restriction fragment (TRF) method, a major advantage of the Dako Telomere PNA Kit/FITC assay is that it does not suffer from the interaction of subtelomere sequences.



Cells mixed with hybridization solution without probe.



Cells hybridized with hybridization solution containing Dako Telomere PNA Probe/FITC.

Lysing, Fixation and Permeabilization Reagents

Erythrocyte-Lysing Reagent, Uti-Lyse™

CE S3325 Ready-to-use 250 tests, 25 mL
CE S3350 Ready-to-use 500 tests, 50 mL

These reagents provide complete and gentle lysis of erythrocytes. They are used following immunofluorescence staining of cells from whole blood or bone marrow, and prior to flow cytometric analysis. Due to the optical matching properties of the lysing buffer, the residual red cell debris does not need to be removed by centrifugation for most samples, making the reagents suitable for use in both 'wash' and 'no wash' staining procedures. In addition to lysis of red cells, Uti-Lyse™ fixes and stabilizes leucocytes. These reagents work with Dako antibodies, and are designed for use with most commercially available flow cytometers.

Erythrocyte-Lysing Reagent without Fixative, EasyLyse™

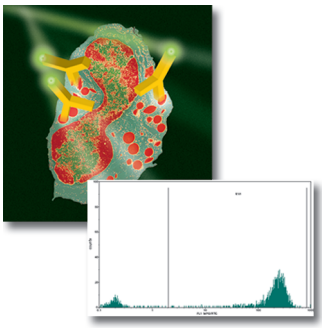
CE S2364 Concentrated x 20 300 tests, 6 x 5 mL

This reagent provides complete and gentle lysis of erythrocytes. It is used following immunofluorescence staining of cells from whole blood, leukapheresis samples or cord blood, and prior to flow cytometric analysis. The reagent contains ammonium chloride and no fixative. One package contains 6 vials of 5 mL 20 x concentrated solution. Owing to the optical matching properties of EasyLyse™, the residual red cell debris does not need to be removed by centrifugation for most samples, making the reagent suitable for use in both 'wash' and 'no wash' staining procedures. The reagent works with Dako antibodies, and is designed for use with most commercially available flow cytometers.

IntraStain, Fixation and Permeabilization Kit for Flow Cytometry

CE K2311 100 tests

IntraStain is intended for two-step fixation and permeabilization of single-cell suspensions. This procedure allows immunological detection of intracellular antigens while the cellular structure, morphologic light scatter, and cell surface immunoreactivity remain intact. Cells treated with IntraStain can, therefore, be identified in flow cytometry by their light scatter properties and surface marker expression, while simultaneously being analysed for intracellular antigens.



Intracellular staining of cells from a case of acute myeloid leukemia using IntraStain, Code K2311, and Anti-Myeloperoxidase/FITC, Code F0714.

Quantitative Analysis

QIFIKIT®*

RU0 K0078 10 calibrations

QIFIKIT® is intended for the quantitative determination of cell surface antigens by flow cytometry using indirect immunofluorescence assay (1, 2).
QIFIKIT® consists of a series of 6 bead populations, approximately 10 µm in diameter and coated with different, but well-defined quantities of a mouse monoclonal antibody (Mab). The number of Mab molecules on the 6 bead populations ranges from 0 to 400 000-800 000. The precise values are provided with the kit. The beads mimic cells labeled with a specific primary mouse monoclonal antibody.
Briefly, the procedure for quantitation is as follows: Specimen cells are labeled with primary mouse Mab at saturating concentration. Under this condition the primary Mab binds to the cell surface antigen monovalently. Therefore, the number of bound antibody molecules corresponds to the number of antigenic sites. Then, the cells are incubated, in parallel with the QIFIKIT® beads, with Polyclonal Goat Anti-Mouse Immunoglobulins/FITC, Goat $F(ab')_2$, Code F0479, at saturating concentration.
A calibration curve is constructed by plotting the fluorescence intensity of the individual bead populations against the number of Mab molecules on the beads. The number of antigenic sites on the specimen cells are then determined by interpolation.
The kit is presented as two complementary bead cocktails: A 'Set-Up Cocktail' and a 'Calibration Cocktail', each containing 1 mL, enough for 10 calibrations. Also included in the kit is 200 µL Polyclonal Goat Anti-Mouse Immunoglobulins/FITC, Goat $F(ab')_2$, Code F0479.
The kit is economical in use, as different cell specimens may be labeled with different primary antibodies and then quantitated using the same set of calibration beads. The only requirement is that specimens and beads are incubated with the conjugate simultaneously.

* Registered trademark of BIOCYTEX

References:

1. Poncelet P, Carayon P. Cytofluorometric quantification of cell-surface antigens by indirect immunofluorescence using monoclonal antibodies. J Immunol Methods 1985;85:65-74.
2. Poncelet P, Lavabre-Bertrand T, Carayon P. Quantitative phenotypes of B chronic lymphocytic leukemia B cells established with monoclonal antibodies from the B cell protocol. In: Reinherz EL et al., eds. Leukocyte Typing II. New York-Berlin-Heidelberg-Tokyo: Springer-Verlag, 1986;2:329-43.

Calibration Beads

FluoroSpheres 6-Peak, Flow Cytometry Sensitivity Particles

CE K0110 Calibration beads for daily monitoring of the flow cytometer 40 tests

FluoroSpheres 6-Peak are polystyrene microparticles suited for daily monitoring of the flow cytometer. FluoroSpheres contain a mixture of 3.2 µm microparticles of six different fluorescence intensities. Each particle contains a mixture of fluorochromes to be excited at any wavelength from 364 to 650 nm. This broad excitation range allows the kit to be used in instruments with UV, and single or dual laser light sources.

Unconjugated Control Reagents

Mouse IgG1

CE X0931 Culture supernatant 1 mL

X0931 is a cell culture supernatant containing monoclonal mouse IgG1 antibody to *Aspergillus niger* glucose oxidase, an enzyme which is neither present nor inducible in mammalian tissues. X0931 is well-suited as a negative control in all techniques utilizing monoclonal mouse antibodies of isotype IgG1.

Mouse IgG2a

CE X0943 Culture supernatant 1 mL

X0943 is a cell culture supernatant containing monoclonal mouse IgG2a antibody to *Aspergillus niger* glucose oxidase, an enzyme which is neither present nor inducible in mammalian tissues. X0943 is well-suited as a negative control in all techniques utilizing monoclonal mouse antibodies of isotype IgG2a.

Mouse IgG2b

CE X0944 Culture supernatant 1 mL

X0944 is a cell culture supernatant containing monoclonal mouse IgG2b antibody to *Aspergillus niger* glucose oxidase, an enzyme which is neither present nor inducible in mammalian tissues. X0944 is well-suited as a negative control in all techniques utilizing monoclonal mouse antibodies of isotype IgG2b.

Mouse IgM

CE X0942 Culture supernatant 1 mL

X0942 is a cell culture supernatant containing monoclonal mouse IgM antibody to *Aspergillus niger* glucose oxidase, an enzyme which is neither present nor inducible in mammalian tissues. X0942 is well-suited as a negative control in all techniques utilizing monoclonal mouse antibodies of isotype IgM.