Cytodelics
The Whole Blood Workflow Company

TECHNICAL GUIDE
NOVEMBER 2026

Antibody Clone Compatibility Guide

Clones validated by Cytodelics, reported by customers, and used in peer-reviewed studies on samples processed with Cytodelics Whole Blood Cell Stabiliser and Fix/Lyse reagents, for flow and mass cytometry.

185
targets (154 human, 31 murine)

265
antibody clones listed

145
clones validated in-house or reported by customers

55
publications using Cytodelics products

Inside this guide

2 Human surface markers, CD1c–CD69

3 Human surface markers, CD71–TIM-3

4 Intracellular, phospho-signalling and murine markers

5 Before you stain: fixation-sensitive epitopes, recommended alternatives, references

6 Publications using Cytodelics products

7 Overnight staining and how to work with us

200 clones, covering 147 targets, have worked in at least one published study. 80 of them are also validated by Cytodelics or customers; the other 120 come from publications alone.

How to read the tables

C Validated by Cytodelics

U Tested and reported by customers

1–12 Published study that used the clone on Cytodelics-processed samples (references on page 5)

† At least one conjugate of this clone lost signal in a published study. Use a validated fluorochrome and re-titrate.

F · M Flow cytometry (incl. spectral) · mass cytometry

Human surface markers · CD1c–CD69

Clone · platform · evidence

Target	Clone	Use	Evidence
CD1c	F10/21A3	F	C 8
	L161†	F·M	1 7 12
CD2	RPA-2.10	F	9
	TS1/8	M	4
CD3	SK7†	F	7 12
	UCHT1	F·M	C 1 4 5 6 8 9 11 12
CD4	RPA-T4	F·M	C 1 4 5
	SK3	F·M	C 6 9 11 12
CD5	L17F12	F	C
	UCHT2	F·M	C 1 5
CD7	CD7-6B7	M	C 1 5
CD8	3B5	F	6
	HIT8A	F	C
	RPA-T8	F·M	C 5
	SK1	F·M	C 1 4 9 11 12
CD9	HI91	M	5
	M-L13	F	C
	SN4 C3-3A2	F·M	C 1
CD10	HI10a	F·M	U 4 5 8 12
CD11b	ICRF44	F·M	C 3 8
	M1/70	F	U 6
	D12	F	12
CD11c	B-ly6†	F	C 8 12
	Bu15	F·M	C 1 5 7 11
	S-HCL-3	M	4
CD13	WM15	M	C
	L138	F	12
CD14	63D3	F	8
	HCD14	F	C
	M5E2	F·M	C 1 5 6 7 9 11
	MφP9	F	C 12
	RMO52	M	4
	S18004B	F	12
CD15	HI98	F	U
	W6D3	F·M	C 3 5 8 12
CD16	3G8	F·M	C 1 4 5 6 8 9 11 12
CD19	HIB19†	F·M	C 4 5 7 8 9 11 12
	SJ25C1	F	C
CD20	2H7	F·M	C 1 5 7 11 12
CD21	BL13	M	C
	Bu32	M	C
CD22	4KB128	F	C
	HIB22	M	C 1 5
CD24	ML5†	F·M	C 1 12
	SN3 A5	F	C
CD25	2A3	M	C 1 4
	BC96†	F	6
	M-A251	F·M	C 5 12
CD26	BA5b	M	C 1
	L272	F	C
	M-A261	F	C 8
CD27	L128	F·M	C 1 4 5 11 12

Target	Clone	Use	Evidence
CD28	CD28.2	F·M	C 1 11
	L293	M	5
CD29	TS2/16	F·M	C 1
CD31	WM59	M	C 3
CD32	FUN-2	M	4
CD33	P67.6	F·M	C 5
	WM53	F·M	C 1 5 6 12
CD34	581	F·M	C 1 9
CD35	E11	M	4
CD36	5-271	F·M	4 5 6
	CLB-IVC7	F	8
CD38	HB-7†	M	11
	HIT2	F·M	C 1 4 5 12
	S17015F	F	9
CD39	A1	F·M	C 1 4 5 6
	TU66	F	C
CD40	HB14	M	4
	5C3	F	12
CD41/CD61	A2A9/6	M	4
CD42a	REA209	M	4
CD43	10G7	F	C
	1G10	F	C
	84-3C1	F·M	C 1 5
	MEM-59	F	C
CD44	BJ18	M	C 3
	IM7	F	12
CD45	2D1	F	8 12
	HI30	F·M	C 1 4 5 6 9 11
CD45RA	F8-11-13	F	C
	HI100	F·M	C 1 4 5 9 11 12
CD45RB	MEM-55	F·M	C 1 12
CD45RO	UCHL1	M	5 11
CD49d	9F10	F·M	C 1 5 11 12
CD52	HI186	M	1
CD55	JS11	M	1 4
CD56	5.1H11†	F	6 9 12
	MEM-188	F	7
	NCAM16.2	F·M	C 1 4 5 8 11
	QA17A16	F	C 12
CD57	HCD57	M	C 1 4 5
	HNK-1	F	C 9
	QA17A04	F	12
CD62L	DREG-56†	F·M	C 1 4 8 12
	SK11	F	C
CD63	H5C6†	F·M	4 12
CD64	10.1	F·M	C 1 4 5 8
	S18012E	F	12
CD66	B1.1/CD66	M	5
CD66b	80H3	M	5
	G10F5	F·M	U 6 7 8 9 11 12
CD69	FN50†	F·M	C 5 8 12
	REA824	M	4

Human surface markers · CD71–TIM-3

Clone · platform · evidence

Target	Clone	Use	Evidence
CD71	CY1G4	M	2
	OKT9	M	5
CD74	LN2	M	5
CD81	5A6	M	1
	M38	F	C
CD85j (ILT2)	GHI/75	M	1
CD86	IT2.2	F·M	4 6
	FUN-1	F	12
CD94	HP-3D9	F	9
CD95	DX2†	F·M	C 1 4
CD99	3B2/TA8	F	C
	HCD99	M	C 1 5
CD101	BB27	F·M	U 5
	V7.1	F	12
CD103	Ber-ACT8	F·M	C 5 12
CD114 (G-CSFR)	38660	M	5
CD117	104D2†	F·M	C 12
CD123	6H6†	F·M	C 1 4 5 8 11
	7G3	F	C 12
CD127	A019D5†	F·M	C 1 5 12
	eBioRDR5	F	C 6 9
CD137	4B4-1	F·M	C 1
CD141	1A4	F	8 12
	M80†	F·M	1 5 7
CD142	NY2	M	5
CD147	HIM6	F·M	C 1
CD154 (CD40L)	24-31	F	12
CD159a (NKG2A)	Z199	M	C
CD159c (NKG2C)	134591†	M	C
CD161	DX12†	F	C
	HP-3G10	F·M	C 1 5 11
CD163	GHI/61	F·M	4 5 8 12
CD169	7-239	F·M	C 8
CD172a/b	SE5A5	M	5
CD177	MEM-166	F·M	4 12
CD181 (CXCR1)	8F1/CXCR1	F	U
CD182 (CXCR2)	5E8/CXCR2	F	U
	6C6	F	12
CD185 (CXCR5)	REA103	F	U
	RF8B2†	F	U 12
CD197 (CCR7)	150503	F·M	C 5 12
CD226	DX11	M	5
CD235a	HI264	M	4
CD301	H037G3	M	5
CD319 (SLAMF7)	235614	F	12
CD354 (TREM-1)	TREM-26	M	5
CD371 (CLEC12A)	50C1	M	5
BDCA2 (CD303)	201A	M	5
	V24-785	F	8
BDCA4 (CD304)	12C2	M	5
	U21-1283	F	12

Target	Clone	Use	Evidence
CCR2 (CD192)	K036C2†	F	8
	LS132.1D9	F	12
CCR3 (CD193)	5E8	F	12
CCR5 (CD195)	2D7	F	8
CLA	HECA-452	M	5
CLEC9A	8F9	M	5
CTLA-4	14D3	M	C 5
	BNI3	F	12
CX3CR1	2A9-1	F·M	5 8 12
	8E10.D9	M	1
CXCR4 (CD184)	12G5†	F·M	4 8
FcεRI	AER-37	F·M	4 9
HLA-ABC	W6/32	M	C 3
HLA-DR	G46-6	F·M	C 5
	L243†	F·M	C 1 4 5 6 7 8 11 12
ICOS	C398.4A	F·M	C 9
	DX29	F	12
IgA	IS11-8E10	F	9 12
IgD	IA6-2†	F·M	C 1 4 5 12
IgG	M1310G05	M	5
	G18-145	F	12
IgM	MHM-88†	M	C
	G20-127	F	12
KIR2DL1/S5	143211	M	2
KIR2DL2/L3	DX27	M	2
KLRG1	14C2A07	M	5
LOX-1	15C4	F	8
α4β7 (LPAM-1)	Hu117	M	2
MERTK	590H11G1E3	F	8
PD-1	EH12.2H7	F·M	C 5 12
PD-L1 (CD274)	29E.2A3	F	8
	MIH2	F	12
Siglec-8	7C9	M	5
	837535	F·M	C 1 5
TCR Vα7.2	3C10	M	5
	OF-5A12	F	12
TCR Vδ2	123R3.5B8	M	5
TCRγδ	11F2†	F·M	C 5 12
	5A6.E9	M	C 1
TIM-3 (CD366)	F38-2E2	F	12

Chemokine receptors, CD27 and IgA

These are the epitopes most affected by fixation. Clones marked 12 (CCR2, CCR3, CCR7, CXCR2, CXCR5, CX3CR1) were stained after Cytodelics fixation, with a separate 37 °C chemokine-receptor step. See page 5 for clones to avoid.

Human intracellular

CYTOKINES & EFFECTOR PROTEINS

Target	Clone	Use	Evid.
BCL-2	100	M	5
Granzyme B	GB11	M	C 5
IFN-γ	B27	M	C
IL-17A	BL168	M	C
IL-2	MQ1-17H12	M	C
IL-21	3A3-N2	M	C
IL-22	Poly5161	M	C
IL-6	MQ2-13A5	M	C
Ki-67	Ki-67	M	5
TNF-α	MAb11	M	C
VAMP-7	549115	M	2

TRANSCRIPTION FACTORS

Target	Clone	Use	Evid.
FoxP3	259D/C7	M	C
	PCH101	M	C 5
GATA-3	TWAJ	M	C
PU.1	phpu 13	M	C
T-bet	4B10	M	C

CELL CYCLE

Target	Clone	Use	Evid.
Cyclin A	BF683	M	C
Ki-67	B56	M	C 5
p-HH3	HTA28	M	C
p-Rb [S807/S811]	J112-906	M	C

PHOSPHO-SIGNALLING

Target	Clone	Use	Evid.
IκBα [N-term]	L35A5	M	C
p-CREB	87G3	M	C
p-p38 [T180/Y182]	36/p38	M	C
p-S6 [S235/S236]	D57.2.2E	M	C
p-4E-BP1 [T37/46]	236B4	M	C
p-Akt [S473]	D9E	M	C
p-ERK1/2 [T202/Y204]	D13.14.4E	M	C
p-MAPKAP2 [T334]	27B7	M	C
p-NF-κB p65 [S529]	K10-895.12.50	M	C
p-PLCγ2 [Y759]	K86-689.37	M	C
p-SLP-76	J141-668.36.58	M	C
p-STAT1 [Y701]	58D6	M	C
	A17012A	F	C
p-STAT3 [Y705]	13A3-1	F	C
	D3A7	M	C
p-STAT4 [Y693]	38/p-Stat4	M	C
p-STAT5 [Y694]	A17016B	F	C
	C71E5	M	C
p-STAT6 [Y641]	18/P-Stat6	M	C

Murine

SURFACE · FLOW CYTOMETRY

Target	Clone	Use	Evidence
CD3	17A2	F	10
CD4	RM4-5	F	10
CD8	5H10-1	F	10
CD11a	M17/4	F	10
CD11b	M1/70	F	U 10
CD11c	N418	F	10
CD16/32	Ab93	F	10
CD34	RAM34	F	10
CD45	30-F11	F	U 10
CD48	HM48-1	F	10
CD62L	MEL-14	F	U
CD64	X54-5/7.1	F	10
CD101	Moushi101	F	U
CD115	AFS98	F	10
CD117	2B8	F	10
CD135	A2F10	F	10
CD150	TC15-12F12.2	F	10
CD177	Y127	F	U
CXCR2 (CD182)	SA044G4	F	U
CXCR4 (CD184)	L276F12	F	U
CD200R	OX-110	F	10
PD-L1 (CD274)	MIH5	F	10
CD317	927	F	10
B220	RA3-6B2	F	10
F4/80	T45-2342	F	10
I-A/I-E	M5/114.15.2	F	10
Sca-1 (Ly6A/E)	D7	F	10
Ly6C	REA796	F	10
Ly6G	1A8	F	U 10
NK1.1	PK136	F	10
TER-119	TER-119	F	10

Murine samples

Use the Whole Blood Cell Stabiliser for mice (mWBCS002). Clones marked **10** were used on Cytodelics-fixed mouse tumour and tissue digests, as well as blood (Laplante et al., 2025).

Most human intracellular clones were validated on mass cytometry; phospho-epitopes require stimulation (e.g. WB-STIM) before stabilisation.

Before you stain

Plan chemokine receptors

CCR4/6/7, CXCR3/5 and similar epitopes are fixation-sensitive. Stain them on fresh blood before stabilising, or use clones marked 12 with a separate 37 °C step on fixed cells.

Re-titrate on fixed cells

Optimal antibody concentrations after stabilisation can differ from those on fresh cells.

Pair clone and fluorochrome

Many failures are conjugate-specific. Use a validated clone and conjugate pair where one is listed.

CLONES THAT LOST SIGNAL AFTER FIXATION, AND WHAT TO USE INSTEAD

Target	Avoid	Use instead
CXCR3	G025H7	**Stain before stabilisation**
CCR3	eBio5E8-G9-B4	**5E8 PE with 37 °C step [12], or stain before stabilisation**
CCR4	L291H4	**Stain before stabilisation**
CCR6	G034E3	**Stain before stabilisation**
CXCR6	K041E5	**Stain before stabilisation**
CCR5	J418F1	**2D7 [8]**
CCR7	G043H7 · 3D12 · 2-L1-A	**150503 [5, 12]**
CXCR5	J252D4	**RF8B2 BV711 [12] or REA103**
CD27	O323	**L128**
CD3	HIT3a (AF700)	**UCHT1**
CD11c	3.9	**Bu15**
CD33	HIM3-4	**WM53**
CD56	B159	**NCAM16.2**
TCRγδ	B1.1	**5A6.E9, or 11F2 BUV615 [12]**
CD1c	L161 – PerCP	**L161 metal-tagged (mass) or BV785 [12]**
CD38	HB-7 – PE, FITC	**HIT2**
CD56	5.1H11 – APC	**5.1H11 BV750, PE-Dazzle 594 or Spark NIR685 [12]**
CD127	RDR5 – cFluor R720	**eBioRDR5 PE-Cy5.5 / APC-eFluor 780, or A019D5 PE-Fire 700 [12]**
CCR2	K036C2 – BV421	**K036C2 PerCP-Cy5.5 [8] or LS132.1D9 R718 [12]**

Source: Dott et al. 2024 [9] unless stated; CCR5 from Bonduelle et al. 2025 [8]; alternatives marked [12] from Parthasarathy et al. 2026.

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Publications using Cytodelics products

55 peer-reviewed papers and abstracts, 2018–2026

2026

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10.1111/apt.70816

Tan Z et al. *J Hum Immun*
10.70962/jhi.20260003

Hedberg G et al. *EJHaem*
10.1002/jha2.70228

Parthasarathy V et al. *Cytometry A*
10.1002/cyto.a.70059

2025

Lamichhane S et al. *Nat Commun*
10.1038/s41467-025-66619-6

Fridh P et al. *Neurotrauma Rep*
10.1177/2689288X251396704

Muñoz Sandoval D et al. *J Exp Med*
10.1084/jem.20241667

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10.1016/j.jinf.2024.106304

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10.3390/cells11091527

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2018

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Stain overnight, on your schedule

Cells processed with the Cytodelics Stabiliser and Fix/Lyse reagents are already fixed, so they tolerate long incubations. Staining overnight at 5–8 °C turns a rushed same-day protocol into a relaxed two-day routine, and the whole panel can usually be stained in one step.

Simpler scheduling

Stain at the end of the day and acquire the next morning. Thawing, staining and acquisition can be batched around the working day instead of one long session.

Much less antibody

Overnight staining of fixed cells often works at 5–100× lower antibody concentrations than manufacturers recommend. Titrate each antibody in a broad range to find its true optimum.

Lower background, higher S/N

Lower antibody doses reduce non-specific binding. The result is lower background, a higher signal-to-noise ratio and better resolution of dim and low-abundance markers.

Lower cost per sample

Less antibody per test shrinks the reagent budget, especially for high-dimensional panels and large studies. High cell yield allows standard analyses from 100 µl of blood or less.

Good to know. Plan the blood volume around your rarest population of interest: 100 µl covers standard immunophenotyping, while rare subsets need more input. With overnight staining, many intracellular targets need no separate permeabilisation step; nuclear targets such as FoxP3 may need a mild one. Do not add the fixation step of a commercial Fix/Perm kit to cells that are already fixed.

NEXT STEPS

Let us help you build your panel on stabilised blood

01

Request a trial kit

Test the Stabiliser and Fix/Lyse kit with your own samples and panel.

info@cytodelics.com

02

Design your workflow

Book a free call to plan sampling, storage, staining order and controls.

Book a free consultation

03

Send us your clone list

We will check it against our validation data and suggest alternatives where needed.

support@cytodelics.com

Questions about products or orders: **info@cytodelics.com** · Technical support: **support@cytodelics.com**