Miltenyi Biotec

Tumor Dissociation Kit, human

Preservation of cell surface epitopes

Background

The Tumor Dissociation Kit, human (# 130-095-929), enables the gentle dissociation of tumor tissue, resulting in viable, functional single cells. The dissociation process involves enzymatic digestion steps. Here we tested whether the three enzymes used for enzymatic digestion affect the integrity of cell surface epitopes on the treated cells. Preservation of cell surface epitopes is essential for several downstream applications such as cell separation, flow analysis, and sorting. Our results show that the vast majority of more than 200 epitopes tested is well preserved during enzymatic treatment.

Method

Tumor cell lines mixed with PBMCs (ratio 1:1) were either treated with the Tumor Dissociation Kit enzymes or incubated in buffer without enzymes (2×30 min at 37 °C). The cells that were incubated without enzymes were stained with a cell trace dye. The enzymatically treated and untreated samples were then mixed and stained with each of the fluorochrome-conjugated MACS® Antibodies detecting cell surface epitopes and analyzed by flow cytometry. The cell trace dye enabled the distinction between treated and untreated cells. A decrease in fluorescence signal intensity of the fluorochrome conjugates on the treated cells indicated effects on epitope integrity.

Results

Antibody detecting cell surface epitope	Antibody clone	Antibody detecting cell surface epitope	Antibody clone	Antibody detecting cell surface epitope	Antibody clone	Antibody detecting cell surface epitope	Antibody clone
Anti-CLA	HECA-452	Anti-HLA-DQ	REA303	Anti-TCR-Vα7.2	REA179	CD6	M-T411
Anti-CLIP	REA296	Anti-HLA-DR	AC122	Anti-TCR-Vδ1	REA173	CD8	BW135/80
Anti-CX3CR1	2A9-1	Anti-HLA-DR, DP, DQ	REA332	Anti-TCR-Vδ2	123R3	CD9	SN4 C3-3A2
Anti-DCIR	REA329	Anti-HLA-E	3D12	Anti-TCRα/β	BW242/412	CD10	97C5
Anti-DLL1	MHD1-314	Anti-Jagged2	MHJ2-523	Anti-TCRγ/δ	11F2	CD11a (ITGAL)	REA378
Anti-DR-3	JD3	Anti-KLRG1	REA261	Anti-TSPAN8	REA443	CD11b	M1/70.15.11.5
Anti-FcεRIα	CRA1	Anti-LGR5	DA03-22H2.8	CD1a	HI149	CD11c	MJ4-27G12
Anti-Fibroblast	REA165	Anti-MICA/MICB	6D4	CD1c (BDCA-1)	AD5-8E7	CD13	REA263
Anti-fMLP receptor	REA169	Anti-NKp80	4A4.D10	CD1d	51,1	CD14	TÜK4
Anti-Galectin-3	M3/38	Anti-Notch2	MHN2-25	CD2	LT2	CD15	VIMC6
Anti-HLA Class I B8	REA145	Anti-PTK7 (CCK-4)	188B	CD3	BW264/56	CD16	VEP13
Anti-HLA Class I Bw6	REA143	Anti-ROR-1	2A2	CD4	M-T466	CD18	TS1/18
Anti-HLA-ABC	REA230	Anti-SSEA-1	REA321	CD4	VIT4	CD19	LT19
Anti-HLA-B12	REA138	Anti-SSEA-4	REA101	CD5	UCHT2	CD20	LT20

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CD21	HB5	CD62P	REA389	CD133/2	293C3	CD208 (DC-LAMP)	REA295
CD22	REA340	CD63	H5C6	CD137L (4-1BBL)	REA254	CD209 (DC-SIGN)	DCN47.5
CD24	32D12	CD64	10.1.1	CD138	REA104	CD217 (IL-17RA)	REA290
CD25	4E3	CD66abce	TET2	CD138	B-B4	CD218 (IL-18Rα)	H44
CD27	M-T271	CD66b	REA306	CD140b	REA363	CD220	REA260
CD28	15E8	CD66c	REA414	CD141 (BDCA-3)	AD5-14H12	CD221 (IGF-1R)	REA271
CD29	TS2/16	CD68	Y1/82A	CD142	HTF-1	CD222	REA187
CD31	AC128	CD71	AC102	CD144 (VE-Cadherin)	REA199	CD226 (DNAM-1)	DX11
CD32	2E1	CD72	REA231	CD146	541-10B2	CD229 (Ly-9)	Hly9.1.25
CD33	AC104.3E3	CD73	AD2	CD147	REA282	CD230 (PrP)	REA203
CD35	E11	CD74	5-329	CD148	REA204	CD235a (Glycophorin A)	REA175
CD36	AC106	CD79a	HM47	CD151	REA265	CD239 (BCAM)	REA276
CD38	IB6	CD82	REA221	CD156a (ADAM8)	REA331	CD240DCE	REA327
CD39	MZ18-23C8	CD84	MZ18-21F6	CD156c (ADAM10)	REA309	CD244 (2B4)	REA112
CD40	HB14	CD85a (ILT5)	REA207	CD158a (KIR2DL1)	REA284	CD258 (LIGHT)	REA244
CD41b	REA336	CD85j (ILT2)	GHI/75	CD158a/h (KIR2DL1/DS1)	11PB6	CD262	DJR2-4
CD42a	REA209	CD85k (ILT3)	REA141	CD158b (KIR2DL2/DL3)	DX27	CD266 (FN14)	ITEM-4
CD43	DF-T1	CD87	VIM5	CD158e (KIR3DL1)	DX9	CD268	11C1
CD44	DB105	CD88 (C5AR)	S5/1	CD158e/k	5.133	CD270 (HVEM)	REA247
CD45	5B1	CD89	REA234	CD161	191B8	CD271 (LNGFR)	ME20.4-1.H4
CD45RA	T6D11	CD90	DG3	CD162	REA319	CD276	FM276
CD45RB	REA119	CD95 (FAS)	DX2	CD163	GHI/61.1	CD282 (TLR2)	REA109
CD45RO	UCHL1	CD96 (TACTILE)	REA195	CD171 (L1CAM)	REA163	CD284	HTA125
CD46	REA312	CD97	VIM3b	CD172a (SIRPα)	REA144	CD294	BM16
CD47	REA220	CD99	3B2/TA8	CD172b	B4B6	CD298	REA217
CD49a	TS2/7	CD101	BB27	CD177	REA258	CD300e (IREM-2)	UP-H2
CD49b	REA188	CD103	Ber-ACT 8	CD180 (RP105)	MHR73-11	CD300f (IREM-1)	UP-D2
CD49d	MZ18-24A9	CD104 (Integrin β4)	REA236	CD181 (CXCR1)	8F1	CD303 (BDCA-2)	AC144
CD49e	NKI-SAM1	CD105	43A4E1	CD182 (CXCR2)	REA208	CD312 (EMR2)	REA302
CD49f	GoH3	CD106 (VCAM-1)	REA269	CD184	12G5	CD314 (NKG2D)	BAT221
CD51	REA181	CD107a (LAMP-1)	H4A3	CD185 (CXCR5)	REA103	CD317 (PDCA-1)	REA202
CD52	REA164	CD107b	H4B4	CD192 (CCR2)	REA264	CD318 (CDCP1)	REA194
CD53	REA259	CD111	R1.302	CD193 (CCR3)	5E8.4	CD324 (E-Cadherin)	67A4
CD54 (ICAM-1)	REA266	CD116	REA211	CD194 (CCR4)	REA279	CD326 (EpCAM)	HEA-125
CD55 (DAF)	JS11	CD119	REA161	CD196 (CCR6)	REA190	CD328 (Siglec-7)	REA214
CD56	AF12-7H3	CD122 (IL-2Rβ)	REA167	CD197 (CCR7)	FR 11-11E8	CD337 (NKp30)	AF29-4D12
CD57	TB03	CD123	AC145	CD197 (CCR7)	REA546	CD352	REA339
CD58 (LFA-3)	TS2/9	CD127	MB15-18C9	CD200	OX-104	CD354 (TREM-1)	REA213
CD61	Y2/51	CD132	REA313	CD202b (TIE-2)	REA198	DCIR	REA329
CD62E (E-Selectin)	REA280	CD133/1	AC133	CD205 (DEC205)	HD30		

■ Stable ■ Moderate sensitivity* ■ Strong sensitivity*

* Adjusting the concentration of one of the kit components (enzymes) can aid in preserving sensitive epitopes. For more information please contact us.

Table 1: Stability of cell surface epitopes towards treatment with the Tumor Dissociation Kit, human.

Notes

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