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Multi Tissue Dissociation Kit 1

Preservation of cell surface epitopes

Background

The Multi Tissue Dissociation Kit 1 (# 130-110-201) enables the gentle dissociation of various tissues while preserving cell surface epitopes. Preservation of cell surface epitopes is essential for several downstream applications such as cell separation, flow analysis, and cell sorting. The dissociation process involves enzymatic digestion steps. Here we tested whether the enzymes of the Multi Tissue Dissociation Kit 1 affect the integrity of more than 200 cell surface epitopes. Our results show that most of the epitopes tested are well preserved during enzymatic treatment.

Method

For mouse tissue, preservation of cell surface epitopes was tested on mouse lungs, spleens, and blood either treated with the Multi Tissue Dissociation Kit 1 enzymes or incubated in a buffer without enzymes (40 min at 37 °C). For human tissue, preservation of cell surface epitopes was tested on PBMCs either treated with the Multi Tissue Dissociation Kit 1 enzymes or incubated in a buffer without enzymes (2×30 min at 37 °C). Cells that were incubated without enzymes were labeled with a cell trace dye. Enzymatically treated and untreated samples were then mixed, stained with each of the fluorochrome-conjugated MACS® Antibodies detecting cell surface epitopes, and subsequently 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, mouse

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-B7-H4	REA392	Anti-GITR (CD357)	DTA–1	Anti-Jagged 2	HMJ2-1	Anti-Ly6C	1G7.G10
Anti-ChemR23	REA461	Anti-GR-1	RB6–8C5	Anti-KLRG-1	2F1	Anti-MDL-1	REA582
Anti-DCIR-2	33D1	Anti-H2Kd/H2Dd	REA527	Anti-LPAM-1	REA457	Anti-Mer	REA477
Anti-Dectin-1	REA154	Anti-H2Kk	H100–27.R55	Anti-LT-βR	REA416	Anti-MHC-II	M5/114.15.2
Anti-Embigin	REA501	Anti-H60a	REA556	Anti-Ly49C/F/I/H	14B11	Anti-MHC-II I-Ab	REA528
Anti-EphA2	REA579	Anti-IgD	11–26c.2a	Anti-Ly49D	4E5	Anti-MHC-II I-Ak	REA610
Anti-F4/80	REA126	Anti-IgDa	REA484	Anti-Ly49E/F	REA218	Anti-MHC-II I-Ek	REA510
Anti-FcR Ia	MAR-1	Anti-IgG2ab	X-57	Anti-Ly49G	AT-8	Anti-Nk1.1	PK136
Anti-Feeder Cells	mEF-SK4	Anti-IgM	X-54	Anti-Ly49G2	4D11	Anti-NKp46	REA815
Anti-FR-4	TH6	Anti-Integrin α7	3C12	Anti-Ly49H	REA241	Anti-Notch1	REA357
Anti-Galectin-3	M3/38	Anti-Integrin β7	REA441	Anti-Ly-6G	REA526	Anti-Notch 2	HMN2–35
Anti-GARP	REA139	Anti-Interferon-γR β	REA381	Anti-Ly6B.2	REA115	Anti-Notch 4	HMN4–14

Results, mouse

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-PIR-A/B	REA472	CD20	REA294	CD71	REA627	CD151	REA561
Anti-Plexin B2	REA445	CD21/CD35	7E9	CD73	TY/11.8	CD155	REA519
Anti-Prominin-1	MB9–3G8	CD22	Cy34.1	CD79b	HM79–12	CD166	REA370
Anti-PSA-NCAM	2-2B	CD23	B3B4	CD80	16-10A1	CD171	555
Anti-QA-1B	6A8.6F10.1A6	CD24	M1/69	CD81	EAT2	CD180	RP/14
Anti-QA-2	REA523	CD25	REA568	CD84	REA212	CD183	CXCR3–173
Anti-Rae-1a/b/g	REA578	CD26	H194-112	CD85k	REA141	CD184	REA107
Anti-Sca-1	REA422	CD27	REA499	CD86	PO3.3	CD185	REA215
Anti-Siglec F	ES22–10D8	CD29	HMß1-1	CD87	REA630	CD192	REA538
Anti-Siglec H	551.3D3	CD31	309	CD88	20/70	CD193	REA122
Anti-Syndecan 4	REA640	CD38	REA616	CD90.2	30–H12	CD195	REA354
Anti-TCR β	REA318	CD40	FGK45.5	CD93	REA298	CD196	REA277
Anti-TCR γ/δ	GL3	CD41	MWReg30	CD94	18d3	CD197	4B12
Anti-TCR Vα 3.2 (b,c)	REA395	CD43	REA364	CD95	REA453	CD199	CW–1.2
Anti-TCR Vβ11	REA657	CD44	IM7.8.1	CD100	REA322	CD201	1560
Anti-TCR Vβ8.1/8.2	REA585	CD45	30F11	CD101	REA301	CD204	REA148
Anti-TCR Vβ14	REA645	CD45.1	A20	CD103	2E7	CD205	NLDC–145
Anti-TCR Vδ4	REA372	CD45.2	104-2	CD104	REA456	CD229	REA273
Anti-Ter119	Ter-119	CD45R	RA3–6B2	CD105	MJ7/18	CD244.1	REA524
Anti-TIGIT	REA536	CD45RA	REA639	CD106	429 (MVCAM.A)	CD262	MD5–1–3C2
Anti-Tim-3	RMT3–23	CD45RB	C363–16A	CD107a	1D4B	CD266	ITEM–4
Anti-TIM-3	REA602	CD47	REA170	CD107b	M3/84	CD270	REA275
Anti-Tom22	1C9–2	CD48	HM48-1	CD117	3C11	CD272	REA224
CD1d	1B1	CD49a	REA493	CD119	REA189	CD278	REA192
CD2	RM2-5	CD49b	REA541	CD120b	REA228	CD279	HA2–7B1
CD3	REA641	CD49d	R1-2	CD122	TM–β1	CD282	REA109
CD3e	REA606	CD49c	5H10-27	CD125	REA343	CD284	MTS510
CD4	REA604	CD49f	REA518	CD126	D7715A7	CD300a	REA573
CD5	REA421	CD54	REA171	CD126	REA620	CD301a	REA581
CD6	REA311	CD55 (DAF)	REA300	CD127	A7R 34	CD304	REA380
CD8a	REA601	CD59a	REA287	CD131	REA193	CD307a	REA566
CD8b	H35-17.2	CD61	2C9.G2 (HMβ3–1)	CD134	REA625	CD317	JF05-1C2.4.1
CD9	MZ3	CD62E	REA369	CD137L	TKS–1	CD326	caa7–9G8
CD11b	REA592	CD62L	MEL14–H2.100	CD138	REA104	CD352	13G3
CD11c	N418	CD62P	REA344	CD140b	APB5	CD354	REA191
CD16/CD32	REA377	CD63	REA563	CD140b REA	REA634	CD371	REA594
CD18	M18/2	CD66a	REA410	CD146	ME–9F1		
CD19	6D5	CD69	H1.2F3	CD150	REA299		

Results, human

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-FcεRIα	CRA	CD24	32D12	CD66abce	TET2	CD137L	REA254
Anti-Galectin-3	M3/38	CD25	4E3	CD66b	REA306	CD138	REA104
Anti-HLA-A/B/C	REA230	CD27	M-T271	CD69	FN50	CD140b	REA363
Anti-HLA-DR/DQ/DP	REA332	CD29	TS2/16	CD71	AC102	CD146	541-10B2
Anti-Jagged 2	MHJ2-523	CD31	AC128	CD73	AD2	CD151	REA265
Anti-KLRG-1	REA261	CD35	E11	CD79b	REA120	CD166	REA442
Anti-Notch 2	MHN2-25	CD38	IB6	CD80	2D10	CD171	REA163
Anti-TCR-Vα7.2	REA179	CD40	HB14	CD81	REA513	CD180	MHR73-11
Anti-TCR-Vδ1	REA173	CD41b	REA336	CD84	MZ18-21F6	CD181	8F1
Anti-TCR-Vδ2	123R3	CD43	DF-T1	CD85a (ILT5)	REA207	CD184	12G5
Anti-TCRα/β	BW242/412	CD44	DB105	CD85j (ILT2)	GHI/75	CD185	REA103
Anti-TCRγ/δ	11F2	CD45	5B1	CD85k	REA141	CD192	REA264
Anti-Tom22	1C9-2	CD45RA	T6D11	CD87	VIM5	CD193	5E8.4
CD1d	51,1	CD45RB	REA119	CD88	S5/1	CD195	REA245
CD2	LT2	CD45R0	UCHL1	CD90	DG3	CD196	REA190
CD3	BW264/56	CD47	REA220	CD93	VIMD2	CD197	FR 11-11E8
CD4	VIT4	CD48	REA426	CD95	DX2	CD201	REA337
CD5	UCHT2	CD49a	TS2/7	CD101	BB27	CD205	HD30
CD6	M-T411	CD49b	REA188	CD103	REA803	CD229	Hly9.1.25
CD8	BW135/80	CD49d	MZ18-24A9	CD104	REA236	CD244	REA112
CD9	SN4 C3-3A2	CD49e	NKI-SAM1	CD105	43A4E1	CD262	DJR2-4
CD11b	M1/70.15.11.5	CD49f	GoH3	CD106	REA269	CD266	ITEM-4
CD11c	MJ4-27G12	CD54	REA266	CD107a	H4A3	CD270	REA247
CD16	VEP13	CD55 (DAF)	JS11	CD117	A3C6E2	CD282	REA109
CD18	TS1/18	CD56	AF12-7H3	CD119	REA161	CD284	HTA125
CD19	LT19	CD59a	REA496	CD120a	REA252	CD307a	REA440
CD20	LT20	CD61	Y2/51	CD120b	REA520	CD317	REA202
CD21	HB5	CD62E	REA280	CD122	REA167	CD326	HEA-125
CD22	REA340	CD62P	REA389	CD123	AC145	CD328	REA214
CD23	M-L23.4	CD63	H5C6	CD127	MB15-18C9	CD354	REA213

■ Stable ■ Moderate sensitivity* ■ Strong sensitivity*

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

Table 1: Stability of cell surface epitopes towards treatment with the Multi Tissue Dissociation Kit 1.

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