



Miltenyi Biotec



Multi Tissue Dissociation Kit 2

Preservation of cell surface epitopes

Background

The Multi Tissue Dissociation Kit 2 (# 130-110-203) enables the thorough dissociation of various tough tissues to enhance the yield of cells found at low frequencies after dissociation, such as endothelial cells. Preservation of cell surface epitopes is essential for several downstream applications such as cell separation, flow analysis, and sorting. The dissociation process involves enzymatic digestion steps. Here we tested how the enzymes of the Multi Tissue Dissociation Kit 2 affect the integrity of key epitopes serving for the identification of major leukocyte populations, endothelial cells, and epithelial cells in mouse and human. Our results show that many epitopes are well preserved during enzymatic treatment.

Method

For mouse tissue, preservation of cell surface epitopes was tested on mouse spleens, lungs, blood, or perfused livers, either treated with the Multi Tissue Dissociation Kit 2 enzymes or incubated in buffer without enzymes (30 min at 37 °C). For human tissue, preservation of cell surface epitopes was tested on PBMCs, monocyte-derived dendritic cells, HUVECs, or SKBR3 cells either treated with the Multi Tissue Dissociation Kit 2 enzymes or incubated in buffer without enzymes (30 min at 37 °C). The enzymatically treated and untreated samples were stained with each of the fluorochrome-conjugated MACS® Antibodies detecting cell surface epitopes and subsequently analyzed by flow cytometry. 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
Anti-F4/80	REA126	CD11b	REA592	CD80	16-10A1
Anti-Gr-1	RB6-8C5	CD11c	N418	CD81	EAT2
Anti-LGR5	DA04-10E8.9	CD16/32	REA377	CD90.2	30-H12
Anti-Ly-6C	1G7.G10	CD19	6D5	CD105	MJ7/18
Anti-Ly-6G	REA526	CD25	REA568	CD106	429 (MCCAM.A)
Anti-MHC II	M5/114.15.2	CD31	390	CD107a	1D4B
Anti-NK1.1	PK136	CD40	FGK45.5	CD127	A7R34
Anti-NKp46	29A1.4.9	CD43	REA364	CD140a	APA5
Anti-PDCA-1	JF05-1C2.4.1	CD45	30F11.1	CD140b	APB5
Anti-Siglec-H	551.3D3	CD45R	RA3-6B2	CD205	NLDC-145
Anti-Ter119	Ter-119	CD49b	REA541	CD309	Avas12
CD3e	REA606	CD51	mEF-SK4	CD326 (EpcAM)	caa7-9G8
CD4	REA604	CD61	2C9. G2(HMβ3-1)		
CD8a	REA601	CD62L	MEL-14-H2.100		

Results, human

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	CD27	M-T271	CD123	AC145
Anti-HLA-DR	AC122	CD28	15E8	CD127	MB15-18C9
Anti-KIR2D	NKVF51	CD31	AC128	CD133	AC133
Anti-LGR5	DA03-22H2.8	CD33	AC104.3E3	CD138	B-B4
Anti-NKp80	4A4.D10	CD34	AC136	CD141 (BDCA-3)	AD5-14H12
Anti-PTK7 (CCK-4)	188B	CD36	AC106	CD144	REA199
Anti-Slan (M-DC8)	DD1	CD38	IB6	CD146	ME-9F1
Anti-TCR α/β	BW242/412	CD39	MZ18-23C8	CD158a/h (KIR2DL1/DS1)	11PB6
Anti-TCR γ/δ	11F2	CD40	HB14	CD158b (KIR2DL2/DL3)	DX27
CD1c (BDCA-1)	AD5-8E7	CD44	DB105	CD158e (KIR3DL1)	DX9
CD2	LT2	CD45	5B1	CD158e/k (KIR3DL1/DL2)	5.331
CD3	BW264/56	CD45RA	T6D11	CD161 (NKR-P1A)	191B8
CD4	VIT4	CD45RO	UCHL1	CD163	GHI/61.1
CD4	M-T466	CD49d	MZ18-24A9	CD197 (CCR7)	FR11-11E8
CD6	M-T411	CD49e	NKI-SAM1	CD203c	FR3-16A11
CD8	BW135/80	CD49f	GoH3	CD209	DCN47.5
CD10	97C5	CD56	AF12-7H3	CD226 (DNAM-1)	DX11
CD11b	M1/70.15.11.5	CD57	TB03	CD266	ITEM-4
CD11c	MJ4-27G12.4.6	CD62L	145/15	CD271	ME20.4 1.H4
CD14	TÜK4	CD63	H5C6	CD294 (CRTH2)	BM16
CD15	VIMC6	CD66abce	TET2	CD303 (BDCA-2)	AC144
CD16	VEP13	CD73	AD2	CD314 (NKG2D)	BAT221
CD19	LT19	CD84	MZ18-21F6	CD324	67A4
CD20	LT20	CD90	DG3	CD326 (EpCAM)	HEA-125
CD24	32D12	CD95	DX2	CD335 (NKp46)	9E2
CD25	4E3	CD101	BB27	CD337 (NKp30)	AF29-4D12
CD26	FR10-11G9	CD105	43A4E1		

■ Stable
 ■ Moderate sensitivity*
 * Reducing the concentration of one of the kit components (Enzyme P) 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 2.



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