Technical Data Sheet

Human Cell Surface Marker Screening Panel

Product Information

Material Number:	**560747**
Size:	5 tests
Component:	**51-9006585AK**
Description:	Human Cell Surface Marker Screening Panel - Part A
Size:	5 tests (1 ea)
Component:	**51-9006588BK**
Description:	Human Cell Surface Marker Screening Panel - Part B
Size:	5 tests (1 ea)

Description

The BD Lyoplate™ Human Cell Surface Marker Screening Panel contains 242 purified monoclonal antibodies to cell surface markers. The panel also contains both mouse and rat isotype controls for assessing isotype-specific background. The panel can be used for screening cell lines, primary cells or tissue, and is compatible with flow cytometry and bioimaging technology platforms. The panel contains three (3) 96 well plates, each well containing 2.75 µg of antibody, enough for five tests (0.5 µg/test) along with AlexaFluor® 647 conjugated goat anti-mouse Ig and goat anti-rat Ig secondary antibodies. This product is compatible with cells expressing fluorescent reporter genes, such as green fluorescent protein (GFP) and can be used with additional antibodies that recognize cell surface and intracellular molecules. Positive hits from screens can be followed-up with either purified or flurochrome-conjugated antibodies offered by BD Biosciences. To access this content, you can search either the name of the clone and/or the name of the specificity on our website: http://www.bdbiosciences.com

Component 51-9006585AK - Human Cell Surface Marker Panel - Part A

- Human Cell Surface Marker Lyoplate Plate 1 (1 each)
- Human Cell Surface Marker Lyoplate Plate 2 (1 each)
- Human Cell Surface Marker Lyoplate Plate 3 (1 each)
- **Store unopened plates at room temperature (18-25°C).**
- Antibodies are lyophilized in an aqueous buffered solution containing BSA and ≤ 0.09% sodium azide.

Component 51-9006588BK - Human Cell Surface Marker Screening Panel - Part B

- AlexaFluor® 647 Goat Anti-Mouse Ig (1.8 ml)
- AlexaFluor® 647 Goat Anti-Rat Ig (0.6 ml)
- **Store the secondary antibodies at 4°C.**
- The secondary antibodies are provided in an aqueous buffered solution containing ≤ 0.09% sodium azide.

It is important to note the antibodies present in this panel may not recognize all isoforms of each cell surface marker. In addition, antibody clones can behave differently on cell types depending on the availability of epitopes present, i.e., certain epitopes can be occluded by post-translational modifications. Results you obtain in this screen may only be relevant to the antibody clones tested.

Application Notes

Recommended Assay Procedure:
Important instructions before you begin:

- **Do not remove the plates from the foil bags until they are ready to be used. The foil bag is the primary moisture barrier. Once the plates are removed from the foil bags, the antibodies must be reconstituted.**
- **Before removing the foil seal be sure to spin plates and also use caution when removing foil seal. Please see "reconstituting the antibody" section below for details.**
- **After the foil seal is removed and prior to reconstitution, avoid placing the plastic lid or any cover on the plates or resealing the plates with an adhesive-based plate seal. In each case, the resulting static can cause the cakes to dislodge and escape from the wells.**

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- **You may notice that not all lyophilized cakes have the same physical appearance. This is expected and will not affect performance of the antibodies.**
- Some cell surface markers are sensitive to enzymatic digestion. When possible use a non-enzymatic cell dissociation buffer for preparing cells for flow cytometry. For enzymatic cell dissociation of cell lines we recommend using Accutase™ (Cat. No. 561527).
- Ensure that cells are in a single cell suspension. A DNase treatment step and addition of EDTA to BD Pharmingen™ Stain Buffer (FBS) (Cat. No. 554656) will mitigate cell clumping.
- Some antibodies to cell surface markers can produce artifacts (false positives and negatives) on fixed cells. If fixation is necessary, staining live cells with subsequent fixation prior to analysis can help reduce these artifacts.
- While the majority of the antibodies in the panel were raised in mouse, some of the antibodies were raised in rat; these are located on Plate 3 in wells F1-F9, F11-F12, G1 and H1-H4 (red wells on map of Plate 3). Ensure that anti-rat Ig secondary antibody is used with cells stained with these antibodies.
- We recommend including an unstained cell control and secondary antibody controls. For convenience, well A1 in Plates 1, 2 and 3 are reserved for the anti-mouse secondary antibody. We recommend using wells H5 and H6 on Plate 3 for anti-rat secondary controls and wells H7 and H8 for the unstained cell controls.
- There are wells in Plate 3 which do not contain antibody. These wells may be used to add additional antibodies to the screen (gray wells on map of Plate 3).
- For flow cytometric analysis we recommend running 500,000 to 1,000,000 cells per well for best results. However, we have been successful in running as few as 250,000 cells per well.
- For flow cytometric analysis we recommend using a 96-well HTS plate loader. However, we have also been successful transferring stained cells from 96-well plates into BD Falcon™ 12 X 75 mm round bottom tubes (Cat. No. 352008) and using a manual loader to run samples.

Reconstituting the antibody:

- After removing BD Lyoplate Human Cell Surface Marker Screening Panel plates from foil bags, centrifuge at 300 X g for 5 minutes.
- Hold the plate firmly on the work bench and **gently remove the foil seal** starting from one end and pulling across the plate to completely remove the seal. Once the foil seal is removed, all lyophilized antibodies **must be** immediately reconstituted. Do not replace the lid on the plate prior to reconstitution.
- Using a multi-channel pipette, reconstitute lyophilized antibodies in 110 µl of 1X sterile PBS. This results in an antibody solution that contains five tests (20 µl/test). Be sure to use fresh pipette tips for each row to prevent well-to-well contamination. Allow antibodies to reconstitute for five minutes at room temperature.
- **Store the reconstituted antibodies at 4°C until the cells are prepared for experiments. Reconstituted antibodies can be stored in plates with lids at 4°C for at least 10 days.**
- Seal the plate edges (with lid on) with Parafilm "M"® laboratory film to prevent loss of reconstituted antibody due to evaporation.

Screening cells by flow cytometry:

1. Prepare a single cell suspension of live cells from a cell line, tissue or a three dimensional culture. For adherent cell lines, we recommend using either a mild enzyme such as Accutase™ or a non-enzymatic dissociation buffer.
2. Wash the cells in two to four volumes of 1X PBS. Centrifuge at 300 X g for 5 minutes.
3. Remove any clumps by passing the cells through a BD Falcon™ 40 or 70 µm cell strainer (Cat. No. 352340, Cat. No. 352350).
4. Determine the cell concentration and total number of cells. If you are dissociating tissue or a three dimensional culture, we recommend treating the single cells with DNase to prevent cell clumping. Resuspend cells in the recommended growth media or 1X PBS with calcium and magnesium with the addition of 100 units/ml DNase at 10 million cells per ml. Incubate for 15 minutes at room temperature.
5. Wash the cells in two to four volumes of 1X PBS. Centrifuge at 300 X g for 5 minutes.

6. Prepare 275 ml of BD Pharmingen Stain Buffer (FBS) with the addition of 5 mM EDTA (final concentration) for subsequent steps.

7. Resuspend the sample in BD Pharmingen Stain Buffer + EDTA. You will need 135 to 270 million cells (in approximately 27 ml total volume) to fill the antibody containing wells of the three plates (500,000-1,00,000 cells per well). The minimum number of cells per well will depend on the cytometer and/or loss of cells during washing. We have been successful in running as few as 250,000 cells per well.

8. Label three BD Falcon™ round bottom 96 well plates (Cat No. 353910) plates 1, 2 and 3 for your sample plates.

9. Using a multi-channel pipette aliquot 100 µl of cell solution to required wells of the three labeled round-bottom 96-well plates.

    a. If you have a limited number of cells, you can omit buffer only wells from plate 3. Please refer to the Plate 3 map to identify wells that can be excluded taking into consideration unstained cells and secondary antibody controls.

10. Using a multi-channel pipette, pipette up and down 2-3 times to fully mix the reconstituted antibody from the first row of wells from the BD Lyoplate Screening Panel Plate 1. Add 20 µl to the cells in the corresponding wells of sample plate 1. Continue to add reconstituted antibody to the corresponding sample wells for all remaining wells of each plate. Use fresh tips for every well. Incubate on ice for 20-30 minutes

11. To wash, add 100 µl of BD Pharmingen Stain Buffer + EDTA to each well. Centrifuge at 300 X g for 5 minutes.

12. Remove supernatant carefully and wash cells with an additional 200 µl of BD Pharmingen Stain Buffer + EDTA. Centrifuge at 300 X g for 5 minutes.

13. During the centrifugation step of the final wash, dilute the secondary antibody 1:200 dilution (1.25 µg/ml) in BD Pharmingen Stain Buffer + EDTA. You will need about 26 ml of dilute anti-mouse secondary antibody and about 3 ml of diluted anti-rat secondary antibody.

14. Remove supernatant and apply 100 µl of the appropriate secondary antibody directly to cells in each well and incubate for 20-30 minutes on ice in the dark.

    a. Add anti-mouse secondary antibody to all wells of the first two labeled round-bottom 96-well sample plates. For sample plate 3, please refer to the Plate maps and add anti-mouse secondary antibody to the appropriate sample wells (white wells: all wells in rows A, B and C; wells D1-D4 and E1-E5; well F10) and add anti-rat secondary antibody to the appropriate wells (red wells: wells F1-F9 and F11-F12; wells G1 and H1-H4).

    b. Use remaining wells in sample plate 3 that do not contain antibody (gray wells) to set up unstained cells and anti-rat secondary antibody controls.

15. To wash, add 100 µl of BD Pharmingen Stain Buffer + EDTA to each well. Centrifuge at 300 X g for 5 minutes.

16. Remove supernatant and wash cells with an additional 200µl of BD Pharmingen Stain Buffer + EDTA. Centrifuge at 300 x g for 5 minutes.

17. At this point you may wish to fix your cells prior to analysis. To fix, remove supernatant and add 100 µl of 4% paraformaldehyde in 1X PBS or BD Cytofix™ Fixation Buffer (Cat. No. 554655) per well and incubate for 10 minutes. If you do not wish to fix your cells go to step 19.

18. Wash cells twice with 1X PBS. Centrifuge at 300 X g for 5 minutes.

19. Remove supernatant and resuspend cells in 150 µl of BD Pharmingen Stain Buffer + EDTA per well. Analyze your samples on a flow cytometer. We recommend collecting at least 10,000 events per well. While the first plate is being read, store the other plates on ice in the dark.

Screening cells by bioimaging:

1. Seed the cells in appropriate culture medium at an appropriate cell density in a BD Falcon™ 96-well Imaging Plate (Cat. No. 353219), and culture cells to an appropriate density. We recommend 70-80% confluency for imaging screens.

2. BD Lyoplate surface staining should be performed on live cells as fixation can cause artifacts (false positive and negative signals) with some cell surface markers. In cases where cells must be fixed prior to staining, we recommend confirming any positive hits with a live sample stain using imaging or flow cytometry.

3. Using a multi-channel pipette add 20 µl of each reconstituted antibody to the correspnding wells of your sample plates and incubate on ice for 20-30 minutes. Stain cells directly in 50 to 100 µl of fresh growth media. If staining fixed cells, stain cells in 1X PBS.

4. Wash cells twice in 100 µl 1X PBS.

5. Dilute secondary antibodies to 1:100 (2.5 µg/mL) in growth media and apply 100 µl of the appropriate secondary antibody directly to cells in each well of the sample plates and incubate for 20-30 minutes on ice in the dark. You will need about 26 ml of diluted anti-mouse secondary antibody and about 3 ml of diluted anti-rat secondary antibody.

   a. Add anti-mouse secondary antibody to all wells of the first two labeled imaging 96-well sample plates. For sample plate 3, please refer to the Plate maps and add anti-mouse secondary antibody to the appropriate sample wells (white wells: all wells in rows A, B and C; wells D1-D4 and E1-E5; well F10) and add anti-rat secondary antibody to the appropriate wells (red wells: wells F1-F9 and F11-F12; wells G1 and H1-H4).

   b. Use remaining wells in sample plate 3 that do not contain antibody (grey wells) to set up unstained cells and anti-rat secondary antibody controls.

6. Remove supernatant and wash cells twice in 100 µl 1X PBS.

7. At this point you may wish to fix your cells prior to analysis. To fix, remove supernatant and add 100 µl of 4% paraformaldehyde in 1X PBS or BD Cytofix Fixation Buffer per well and incubate for 10 minutes. If you do not wish to fix your cells go to step 9.

8. Remove the fixative from the wells, and wash the wells twice with 100 µl of 1X PBS.

9. Add 100 µl 1X PBS with a cell-permeable nucleic acid stain, such as Hoechst 33342 Solution (Cat. No. 561908).

10. Analyze your samples on a high content bioimager.

Suggested Companion Products

Description	Size	Catalog Number
BD Pharmingen™ Stain Buffer (FBS)	500 ml	554656
BD Cytofix™ Fixation Buffer	100 ml	554655
BD Accutase™	100 ml	561527
BD Pharmingen™ Hoechst 33342 Solution	1 mg/ml	561908

Related Products

Description	Size	Catalog number
BD Falcon™ 96-well Microplates, Black/Clear With Lid, for High-Content Imaging Assays	32/case	353219
BD Falcon 96-well Microplates, Round Bottom, No Lid, for High-Throughput Flow Cytometry Analysis	50/case	353910
BD Falcon Low Evaporation Lids for BD Falcon 96-well Microplates	50/case	353071

Warnings and Precautions

The Human Cell Surface Marker Screening Panel (Part A), containing Lyoplates 1, 2 and 3, contains sodium azide. Investigators should note that the following risk and safety statements are applicable:

Hazard symbols:
Harmful by inhalation
Xn Harmful

Hazard-determining components of labeling:
Sodium azide

Risk phrases:
Harmful in contact with skin
22 Harmful if swallowed

Safety phrases:
23 Do not breathe gas/fumes/vapour/spray
36 Wear suitable protective clothing
60 This material and its container must be disposed of as hazardous waste

Plate 1

Specificity	Clone	Isotype
CD1a	HI149	Ms IgG 1, κ
CD1b	M-T101	Ms IgG 1, κ
CD1d	CD1d42	Ms IgG 1, κ
CD2	RPA-2.10	Ms IgG 1, κ
CD3	HIT3a	Ms IgG 2a, κ
CD4	RPA-T4	Ms IgG 1, κ
CD4v4	L120	Ms IgG 1, κ
CD5	L17F12	Ms IgG 2a, κ
CD6	M-T605	Ms IgG 1, κ
CD7	M-T701	Ms IgG 1, κ
CD8a	SK1	Ms IgG 1, κ
CD8b	2ST8.5H7	Ms IgG2a, κ
CD9	M-L13	Ms IgG 1, κ
CD10	HI10a	Ms IgG 2a, κ
CD11a	G43-25B	Ms IgG 2a, κ
CD11b	D12	Ms IgG 2a, κ
CD11c	B-ly6	Ms IgG 1, κ
CD13	WM15	Ms IgG 1, κ
CD14	M5E2	Ms IgG 2a, κ
CD15	HI98	Ms IgM, κ
CD15s	CSLEX1	Ms IgM, κ
CD16	3G8	Ms IgG 1, κ
CD18	6.7	Ms IgG 1, κ
CD19	HIB19	Ms IgG 1, κ
CD20	2H7	Ms IgG 2b, κ
CD21	B-ly4	Ms IgG 1, κ
CD22	HIB22	Ms IgG 1, κ
CD23	EBVCS-5	Ms IgG 1, κ
CD24	ML5	Ms IgG 2a, κ
CD25	M-A251	Ms IgG 1, κ
CD26	M-A261	Ms IgG 1, κ
CD27	M-T271	Ms IgG 1, κ

Specificity	Clone	Isotype
CD28	L293	Ms IgG 1, κ
CD29	HUTS-21	Ms IgG 2a, κ
CD30	BerH8	Ms IgG 1, κ
CD31	WM59	Ms IgG 1, κ
CD32	FL18.26	Ms IgG 2b, κ
CD33	HIM3-4	Ms IgG 1, κ
CD34	581	Ms IgG 1, κ
CD35	E11	Ms IgG 1, κ
CD36	CB38 (NL07)	Ms IgM, κ
CD37	M-B371	Ms IgG 1, κ
CD38	HIT2	Ms IgG 1, κ
CD39	TU66	Ms IgG2b, κ
CD40	5C3	Ms IgG 1, κ
CD41a	HIP8	Ms IgG 1, κ
CD41b	HIP2	Ms IgG 3, κ
CD42a	ALMA.16	Ms IgG 1, κ
CD42b	HIP1	Ms IgG 1, κ
CD43	1G10	Ms IgG 1, κ
CD44	G44-26	Ms IgG 2b, κ
CD45	HI30	Ms IgG 1, κ
CD45RA	HI100	Ms IgG 2b, κ
CD45RB	MT4	Ms IgG 1, κ
CD45RO	UCHL1	Ms IgG 2a, κ
CD46	E4.3	Ms IgG 2a, κ
CD47	B6H12	Ms IgG 1, κ
CD48	TU145	Ms IgM, κ
CD49a	SR84	Ms IgG 1, κ
CD49b	AK-7	Ms IgG 1, κ
CD49c	C3 II.1	Ms IgG 1, κ
CD49d	9F10	Ms IgG 1, κ
CD49e	VC5	Ms IgG 1, κ
CD50	TU41	Ms IgG 2b, κ

Specificity	Clone	Isotype
CD51/61	23C6	Ms IgG 1, κ
CD53	HI29	Ms IgG 1, κ
CD54	LB-2	Ms IgG 2b, κ
CD55	IA10	Ms IgG 2a, κ
CD56	B159	Ms IgG1, κ
CD57	NK-1	Ms IgM, κ
CD58	1C3	Ms IgG 2a, κ
CD59	p282 (H19)	Ms IgG 2a, κ
CD61	VI-PL2	Ms IgG 1, κ
CD62E	68-5H11	Ms IgG 1, κ
CD62L	Dreg 56	Ms IgG 1, κ
CD62P	AK-4	Ms IgG 1, κ
CD63	H5C6	Ms IgG 1, κ
CD64	10.1	Ms IgG 1, κ
CD66 (a,c,d,e)	B1.1/CD66	Ms IgG 2a, κ
CD66b	G10F5	Ms IgM, κ
CD66f	IID10	Ms IgG 1, κ
CD69	FN50	Ms IgG 1, κ
CD70	Ki-24	Ms IgG 3, κ
CD71	M-A712	Ms IgG 2a, κ
CD72	J4-117	Ms IgG 2b, κ
CD73	AD2	Ms IgG 1, κ
CD74	M-B741	Ms IgG 2a, κ
CD75	LN1	Ms IgM, κ
CD77	5B5	Ms IgM, κ
CD79b	CB3-1	Ms IgG 1, κ
CD80	L307.4	Ms IgG 1, κ
CD81	JS-81	Ms IgG 1, κ
CD83	HB15e	Ms IgG 1, κ
CD84	2G7	Ms IgG 1, κ
CD85	GHI/75	Ms IgG 2b, κ

Plate 2

Specificity	Clone	Isotype
CD86	2331 (FUN-1)	Ms IgG 1, κ
CD87	VIM5	Ms IgG 1, κ
CD88	D53-1473	Ms IgG 1, κ
CD89	A59	Ms IgG 1, κ
CD90	5E10	Ms IgG 1, κ
CD91	A2MR-alpha 2	Ms IgG 1, κ
CDw93	R139	Ms IgG 2b, κ
CD94	HP-3D9	Ms IgG 1, κ
CD95	DX2	Ms IgG 1, κ
CD97	VIM3b	Ms IgG 1, κ
CD98	UM7F8	Ms IgG 1, κ
CD99	TU12	Ms IgG 2a, κ
CD99R	HIT4	Ms IgM, κ
CD100	A8	Ms IgG 1, κ
CD102	CBR-IC2/2.1	Ms IgG 2a, κ
CD103	Ber-ACT8	Ms IgG 1, κ
CD105	266	Ms IgG 1, κ
CD106	51-10C9	Ms IgG 1, κ
CD107a	H4A3	Ms IgG 1, κ
CD107b	H4B4	Ms IgG 1, κ
CD108	KS-2	Ms IgG 2a, κ
CD109	TEA 2/16	Ms IgG 1, κ
CD112	R2.525	Ms IgG 1, κ
CD114	LMM741	Ms IgG 1, κ
CD116	M5D12	Ms IgM, κ
CD117	YB5.B8	Ms IgG 1, κ
CD118	12D3	Ms IgG1, κ
CD119	GIR-208	Ms IgG 1, κ
CD120a	MABTNFR1-A1	Ms IgG 1
CD121a	HIL1R-M1	Ms IgG1, κ
CD121b	MNC2	Ms IgG 1, κ
CD122	Mik-beta 3	Ms IgG 1, κ

Specificity	Clone	Isotype
CD123	9F5	Ms IgG 1, κ
CD124	hIL4R-M57	Ms IgG 1, κ
CD126	M5	Ms IgG1, κ
CD127	hIL-7R-M21	Ms IgG 1, κ
CD128b	6C6	Ms IgG 1, λ
CD130	AM64	Ms IgG 1, κ
CD134	ACT35	Ms IgG 1, κ
CD135	4G8	Ms IgG 1, κ
CD137	4B4-1	Ms IgG 1, κ
CD137 Ligand	C65-485	Ms IgG 1, κ
CD138	Mi15	Ms IgG 1, κ
CD140a	alpha R1	Ms IgG 2a, κ
CD140b	28D4	Ms IgG 2a, κ
CD141	1A4	Ms IgG 1, κ
CD142	HTF-1	Ms IgG 1, κ
CD144	55-7H1	Ms IgG 1, κ
CD146	P1H12	Ms IgG 1, κ
CD147	HIM6	Ms IgG 1, κ
CD150	A12	Ms IgG 1, κ
CD151	14A2.H1	Ms IgG 1, κ
CD152	BNI3	Ms IgG 2a, κ
CD153	D2-1173	Ms IgG 1, κ
CD154	TRAP1	Ms IgG 1, κ
CD158a	HP-3E4	Ms IgM, κ
CD158b	CH-L	Ms IgG 2b, κ
CD161	DX12	Ms IgG 1, κ
CD162	KPL-1	Ms IgG 1, κ
CD163	GHI/61	Ms IgG 1, κ
CD164	N6B6	Ms IgG 2a, κ
CD165	SN2	Ms IgG 1, κ
CD166	3A6	Ms IgG 1, κ
CD171	5G3	Ms IgG2 a

Specificity	Clone	Isotype
CD172b	B4B6	Ms IgG 1, κ
CD177	MEM-166	Ms IgG 1, κ
CD178	NOK-1	Ms IgG 1
CD180	G28-8	Ms IgG 1, κ
CD181	5A12	Ms IgG 2b, κ
CD183	1C6/CXCR3	Ms IgG 1, κ
CD184	12G5	Ms IgG 2a, κ
CD193	5E8	Ms IgG 2b, κ
CD195	2D7/CCR5	Ms IgG 2a, κ
CD196	11A9	Ms IgG 1, κ
CD197	2H4	Ms IgM, κ
CD200	MRC OX-104	Ms IgG 1, κ
CD205	MG38	Ms IgG 2b, κ
CD206	19.2	Ms IgG 1, κ
CD209	DCN46	Ms IgG 2b, κ
CD220	3B6/IR	Ms IgG 1, κ
CD221	3B7	Ms IgG 1, κ
CD226	DX11	Ms IgG 1, κ
CD227	HMPV	Ms IgG 1, κ
CD229	HLy9.1.25	Ms IgG 1, κ
CD231	M3-3D9 (SN1a)	Ms IgG 1, κ
CD235a	GA-R2 (HIR2)	Ms IgG 2b, κ
CD243	17F9	Ms IgG 2b, κ
CD244	2-69	Ms IgG 2a, κ
CD255	CARL-1	Ms IgG3
CD268	11C1	Ms IgG 1, κ
CD271	C40-1457	Ms IgG 1, κ
CD273	MIH18	Ms IgG 1, κ
CD274	MIH1	Ms IgG 1, κ
CD275	2D3/B7-H2	Ms IgG 2b, κ
CD278	DX29	Ms IgG 1

Plate 3

Specificity	Clone	Isotype
CD279	MIH4	Ms IgG 1, κ
CD282	11G7	Ms IgG 1, κ
CD305	DX26	Ms IgG 1, κ
CD309	89106	Ms IgG 1, κ
CD314	1D11	Ms IgG 1, κ
CD321	M.AB.F11	Ms IgG 1, κ
CDw327	E20-1232	Ms IgG1, κ
CDw328	F023-420	Ms IgG 1, κ
CDw329	E10-286	Ms IgG1, κ
CD335	9E2/NKp46	Ms IgG 1, κ
CD336	P44-8.1	Ms IgG1, κ
CD337	P30-15	Ms IgG1, κ
CD338	5D3	Ms IgG 2b, κ
CD340	Neu24.7	Ms IgG1
αβTCR	T10B9.1A-31	Ms IgM, κ
β2-microglobulin	TU99	Ms IgM, κ
BLTR-1	203/14F11	Ms IgG1, κ
CLIP	CerCLIP	Ms IgG 1, κ
CMRF-44	CMRF44	Ms IgM, κ
CMRF-56	CMRF56	Ms IgG1, κ
EGF Receptor	EGFR1	Ms IgG 2b, κ

Specificity	Clone	Isotype
fMLP receptor	5F1	Ms IgG 1, κ
γδTCR	B1	Ms IgG 1, κ
HPC	BB9	Ms IgG1
HLA-A,B,C	G46-2.6	Ms IgG 1, κ
HLA-A2	BB7.2	Ms IgG 2b, κ
HLA-DQ	TU169	Ms IgG 2a, κ
HLA-DR	G46-6 (L243)	Ms IgG 2a, κ
HLA-DR, DP, DQ	TU39	Ms IgG 2a, κ
Invariant NK T	6B11	Ms IgG 1, κ
Disialoganglioside GD2	14.G2a	Ms IgG2a
MIC A/B	6D4	Ms IgG2a
NKB1	DX9	Ms IgG 1, κ
SSEA-1	MC480	Ms IgM, κ
SSEA-4	MC813-70	Ms IgG3
TRA-1-60	TRA-1-60	Ms IgM
TRA-1-81	TRA-1-81	Ms IgM, κ
Vβ 23	AHUT7	Ms IgG 1, κ
Vβ 8	JR2	Ms IgG 2b, κ
Ms IgM IC	G155-228	Ms IgM
Ms IgG1 IC	MOPC-21	Ms IgG1

Specificity	Clone	Isotype
Ms IgG2a IC	G155-178	Ms IgG2a
Ms IgG2b IC	27-35	Ms IgG2b
Ms IgG3 IC	J606	Ms IgG3
CD49f	GoH3	Rt IgG 2a, κ
CD104	439-9B	Rt IgG2b, κ
CD120b	hTNFR-M1	Rt IgG 2b, κ
CD132	TUGh4	Rt IgG 2b, κ
CD201	RCR-252	Rt IgG 1, κ
CD210	3F9	Rt IgG 2a, κ
CD212	2B6/12beta 2	Rt IgG 2a, κ
CD267	1A1-K21-M22	Rt IgG2a, κ
CD294	BM16	Rt IgG 2a, κ
CD326	EBA-1	Ms IgG1, λ
CLA	HECA-452	Rt IgM, κ
Integrin β7	FIB504	Rt IgG 2a, κ
SSEA-3	MC631	Rt IgM
Rt IgM IC	R4-22	Rt IgM
Rt IgG1 IC	R3-34	Rt IgG1
Rt IgG2a IC	R35-95	Rt IgG2a
Rt IgG2b IC	A95-1	Rt IgG2b

Plate 1

	1	2	3	4	5	6	7	8	9	10	11	12
A	Buffer	CD1a	CD1b	CD1d	CD2	CD3	CD4	CD4v4	CD5	CD6	CD7	CD8a
B	CD8b	CD9	CD10	CD11a	CD11b	CD11c	CD13	CD14	CD15	CD15s	CD16	CD18
C	CD19	CD20	CD21	CD22	CD23	CD24	CD25	CD26	CD27	CD28	CD29	CD30
D	CD31	CD32	CD33	CD34	CD35	CD36	CD37	CD38	CD39	CD40	CD41a	CD41b
E	CD42a	CD42b	CD43	CD44	CD45	CD45RA	CD45RB	CD45RO	CD46	CD47	CD48	CD49a
F	CD49b	CD49c	CD49d	CD49e	CD50	CD51/61	CD53	CD54	CD55	CD56	CD57	CD58
G	CD59	CD61	CD62E	CD62L	CD62P	CD63	CD64	CD66 (a,c,d,e)	CD66b	CD66f	CD69	CD70
H	CD71	CD72	CD73	CD74	CD75	CD77	CD79b	CD80	CD81	CD83	CD84	CD85

Plate 2

	1	2	3	4	5	6	7	8	9	10	11	12
A	Buffer	CD86	CD87	CD88	CD89	CD90	CD91	CDw93	CD94	CD95	CD97	CD98
B	CD99	CD99R	CD100	CD102	CD103	CD105	CD106	CD107a	CD107b	CD108	CD109	CD112
C	CD114	CD116	CD117	CD118	CD119	CD120a	CD121a	CD121b	CD122	CD123	CD124	CD126
D	CD127	CD128b (CD182)	CD130	CD134	CD135	CD137	CD137 Ligand	CD138	CD140a	CD140b	CD141	CD142
E	CD144	CD146	CD147	CD150	CD151	CD152	CD153	CD154	CD158a	CD158b	CD161	CD162
F	CD163	CD164	CD165	CD166	CD171	CD172b	CD177	CD178	CD180	CD181	CD183	CD184
G	CD193	CD195	CD196	CD197	CD200	CD205	CD206	CD209	CD220	CD221	CD226	CD227
H	CD229	CD231	CD235a	CD243	CD244	CD255	CD268	CD271	CD273	CD274	CD275	CD278

Plate 3

	1	2	3	4	5	6	7	8	9	10	11	12
A	Buffer	CD279	CD282	CD305	CD309	CD314	CD321	CDw327	CDw328	CDw329	CD335	CD336
B	CD337	CD338	CD340	αβTCR	β2micro globulin	BLTR-1	CLIP	CMRF-44	CMRF-56	EGF-R	fMLP-R	γδTCR
C	Hem. Progenitor Cell	HLA-A,B,C	HLA-A2	HLA-DQ	HLA-DR	HLA-DR,DP, DQ	Invariant NKT	Disialo-ganglio-side GD2	MIC A/B	NKB1	SSEA-1	SSEA-4
D	TRA-1-60	TRA-1-81	Vβ23	Vβ8	Buffer	Buffer	Buffer	Buffer	Buffer	Buffer	Buffer	Buffer
E	mIgM	mIgG1	mIgG2a	mIgG2b	mIgG3	Buffer	Buffer	Buffer	Buffer	Buffer	Buffer	Buffer
F	CD49f	CD104	CD120b	CD132	CD201	CD210	CD212	CD267	CD294	CD326	Cutaneous Lymph. Ant.	Integrin β7
G	SSEA-3	Buffer	Buffer	Buffer	Buffer	Buffer	Buffer	Buffer	Buffer	Buffer	Buffer	Buffer
H	rIgM	rIgG1	rIgG2a	rIgG2b	Buffer	Buffer	Buffer	Buffer	Buffer	Buffer	Buffer	Buffer

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3. Alexa Fluor® 647 fluorochrome emission is collected at the same instrument settings as for allophycocyanin (APC).
4. This product may be covered by US Patent No. 5,543,320.
5. US Patent No. 5,994,515, University of Pennsylvania.
6. Source of all serum proteins is from USDA inspected abattoirs located in the United States.
7. Caution: Sodium azide yields highly toxic hydrazoic acid under acidic conditions. Dilute azide compounds in running water before discarding to avoid accumulation of potentially explosive deposits in plumbing.