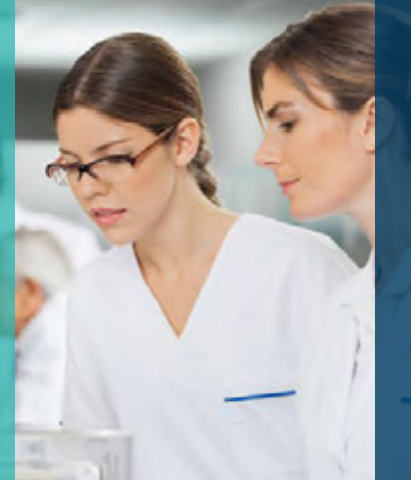


Revealing Intracellular Markers

When the localization of the antigen matters



Contrary to surface markers, many relevant biological markers are found partly or solely inside cells. Identification of such intracellular antigens have emerged as powerful tools in the study of diverse cellular processes and clinical conditions.

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Antibodies useful for identifying intracellular antigens

CD3: Human TCR/CD3 is a complex structure on the lymphocyte surface. It consists of the TCR $\alpha\beta$ or TCR $\gamma\delta$ heterodimer and the associated CD3 complex. The CD3 complex is crucial in transducing antigen-recognition signals into the cytoplasm of T cells and in regulating the cell surface expression of the TCR complex.

CD22: CD22 is a single chain type 1 transmembrane glycoprotein, member of the IgG superfamily and homologous to several other proteins, including myelin basic protein and members of the carcinoembryonic antigen (CEA) family. CD22 expression is restricted to B cells and is absent from other haemopoietic cell types. The antigen is lost during the terminal stages of differentiation prior to the plasma cell stage.

CD68: CD68 belongs to a family of lysosomal glycoprotein (LGP)/plasma membrane shuttling proteins that play a role in endocytosis and/or lysosomal trafficking. CD68 is expressed strongly in cytoplasmic granules, and weakly on the surface of macrophages, monocytes, neutrophils, basophils and NK-cells.

CD79acy: CD79 is non-covalently associated with surface Ig, forming the B-cell receptor complex, which is required for antigen recognition. In precursor B cells, the CD79 protein chains are already expressed in the cytoplasm (CyCD79). Surface expression of CD79 begins at the pro-B cell stage and persists throughout the B-cell differentiation.

IgD, IgG and IgM: Most B cells, with the exception of pre-B progenitor and pre-B cells, and mature plasma cells, express immunoglobulin on their surface. Pre-B cells express cytoplasmic mu-chains but no light chains, whereas the early B lymphocytes express membrane IgM only. The maturing B lymphocytes additionally produce IgD that is inserted into the cell membrane joining IgM and establishing a population of IgM+IgD+ B lymphocytes, which is the largest population of circulating B lymphocytes in man.

Kappa and Lambda Light Chains: Most B cells, with the exception of pre-B progenitors and pre-B cells, and mature plasma cells, express immunoglobulin on their surface. Each cell expresses only one light chain type. In normal peripheral blood and lymph nodes, there is a mixture of kappa-positive and lambda-positive cells, with two-thirds of the cells expressing kappa and one-third expressing lambda.

Lysozyme: Within the haematopoietic system, lysozyme is known as an intracellular pan-myeloid marker molecule that is selectively expressed by cells of the granulo-monocytic

lineage. Mature monocytes are thought to continuously synthesize and secrete lysozyme while granulocytes do not synthesize but only secrete the preformed enzyme.

Myeloperoxidase (MPO): Human myeloperoxidase (MPO) is a lysosomal enzyme present in the azurophilic granules of neutrophils and at lower levels in monocytes.

Plasma Cell: Anti-Human Plasma Cell, VS38c, was clustered as an anti-p63 protein. The p63 protein has a currently unknown function, but because of its homology to both rat and swine proteins, its abundance in secretory cells, and its localization to the rough endoplasmic reticulum, a conserved role in protein processing or secretion is suggested.

Terminal Deoxynucleotidyl Transferase (TdT): Terminal deoxynucleotidyl Transferase (TdT) catalyzes the random addition of deoxynucleotidyl residues on the 3' hydroxyl end of single-stranded DNA. TdT is present in the nuclei of T and B lymphocyte precursors.

Intracellular Markers for Flow Cytometry, ASR*

	Product	Clone	APC	FITC	PerCP	PerCP-Cy5.5	RPE	PB
ASR	Mo a Hu CD3	UCHT1			PR70201-1			PB98201-1
ASR	Mo a Hu CD22	4KB128	C728101-1	F706001-1		PR70750-1	R706101-1	
ASR	Mo a Hu CD68	KP1		F713501-1				
ASR	Mo a Hu CD79acy	HM57	C725201-1				R715901-1	
ASR	Rb a Hu IgD, Specific for Delta-Chains			F018901-1			R511201-1	
ASR	Rb a Hu IgG, Specific for Gamma-Chains			F018501-1				
ASR	Rb a Hu IgM, Specific for Mu-Chains			F005801-1			R511101-1	
ASR	Rb a Hu Kappa Light Chains		C022201-1	F043401-1			R043601-1	
ASR	Rb a Hu Lambda Light Chains			F043501-1		PR71250-1	R043701-1	
ASR	Rb a Hu Lysozyme EC 3.2.1.17			F037201-1				
ASR	Mo a Hu Myeloperoxidase	MPO-7	C724601-1	F071401-1		PR70450-1	R720901-1	
ASR	Mo a Hu Plasma Cell	VS38c		F714901-1		PR71350-1		
ASR	Mo a Hu Terminal Deoxynucleotidyl Transferase	HT-6		F713950-1				

* ASR: Analyte specific reagent. Analytical and performance characteristics are not established.

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