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HLA-DRB (MHC II) Antibody - With BSA and Azide

Mouse Monoclonal Antibody [Clone L243]
Catalog # AH11451

Product Information

Application	IF, FC
Primary Accession	P01911
Other Accession	3123, 534322
Reactivity	Human, Monkey, Chimpanzee, Baboon, Squirrel, Dog
Host	Mouse
Clonality	Monoclonal
Isotype	Mouse / IgG2a, kappa
Clone Names	L243
Calculated MW	29966

Additional Information

Gene ID	3123
Other Names	HLA class II histocompatibility antigen, DRB1-15 beta chain, DW2.2/DR2.2, MHC class II antigen DRB1*15, HLA-DRB1, HLA-DRB2
Application Note	IF~~1:50~200 FC~~1:10~50
Storage	Store at 2 to 8°C.Antibody is stable for 24 months.
Precautions	HLA-DRB (MHC II) Antibody - With BSA and Azide is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	HLA-DRB1 (HGNC:4948)
Function	A beta chain of antigen-presenting major histocompatibility complex class II (MHCII) molecule. In complex with the alpha chain HLA- DRA, displays antigenic peptides on professional antigen presenting cells (APCs) for recognition by alpha-beta T cell receptor (TCR) on HLA-DRB1-restricted CD4-positive T cells. This guides antigen-specific T-helper effector functions, both antibody-mediated immune response and macrophage activation, to ultimately eliminate the infectious agents and transformed cells (PubMed:15265931, PubMed:16148104, PubMed:22327072, PubMed:27591323, PubMed:29884618, PubMed:31495665, PubMed:8642306). Typically presents extracellular peptide antigens of 10 to 30 amino acids that arise from proteolysis of endocytosed antigens in lysosomes (PubMed:8145819). In the tumor microenvironment, presents antigenic peptides that are primarily generated in tumor- resident APCs likely

	via phagocytosis of apoptotic tumor cells or macropinocytosis of secreted tumor proteins (PubMed:31495665). Presents peptides derived from intracellular proteins that are trapped in autolysosomes after macroautophagy, a mechanism especially relevant for T cell selection in the thymus and central immune tolerance (PubMed:17182262, PubMed:23783831). The selection of the immunodominant epitopes follows two processing modes: 'bind first, cut/trim later' for pathogen-derived antigenic peptides and 'cut first, bind later' for autoantigens/self-peptides (PubMed:25413013). The anchor residue at position 1 of the peptide N-terminus, usually a large hydrophobic residue, is essential for high affinity interaction with MHCII molecules (PubMed:8145819).
Cellular Location	Cell membrane; Single-pass type I membrane protein. Endoplasmic reticulum membrane; Single-pass type I membrane protein. Lysosome membrane; Single-pass type I membrane protein. Late endosome membrane; Single-pass type I membrane protein. Autolysosome membrane Note=The MHC class II complex transits through a number of intracellular compartments in the endocytic pathway until it reaches the cell membrane for antigen presentation (PubMed:18305173). Component of immunological synapses at the interface between T cell and APC (PubMed:29884618).
Tissue Location	Expressed in professional APCs: monocyte/macrophages, dendritic cells and B cells (at protein level) (PubMed:19830726, PubMed:23783831, PubMed:31495665). Expressed in thymic epithelial cells (at protein level) (PubMed:23783831)

Background

This MAb reacts with the HLA-DRB1 antigen, a member of MHC class II molecules. It does not cross react with HLA-DP and HLA-DQ. It binds a conformational epitope on HLA-DR, which depends on the correct folding of the □ □□ □heterodimer. This MAb has been reported to block mixed lymphocyte reactions. The L243 antibody recognizes a different epitope than the LN3 monoclonal antibody, and these antibodies do not cross-block binding to each other's respective epitopes. HLA-DR is a heterodimeric cell surface glycoprotein comprised of a 36kD alpha (heavy) chain and a 28kD beta (light) chain. It is expressed on B-cells, activated T-cells, monocytes/macrophages, dendritic cells and other non-professional APCs. In conjunction with the CD3/TCR complex and CD4 molecules, HLA-DR is critical for efficient peptide presentation to CD4+ T cells. It is an excellent histiocytic marker in paraffin sections producing intense staining. True histiocytic neoplasms are similarly positive. HLA-DR antigens also occur on a variety of epithelial cells and their corresponding neoplastic counterparts.

References

Horejsi, V., et al. 1986. Characterization of seven new monoclonal antibodies against human DR, DR + DP and DQ1 + DQ3 antigens. Tissue Antigens 28: 288-297. | Brodsky FM. A matrix approach to human class II histocompatibility antigens: reactions of four monoclonal antibodies with the products of nine haplotypes. Immunogenetics. 1984;19(3):179-94 | Engleman EG, Warnke R, Fox RI, Dilley J, Benike CJ, Levy R. Studies of a human T lymphocyte antigen recognized by a monoclonal antibody. Proc Natl Acad Sci U S A. 1981;78(3):1791-5

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