

# HLA-DRA (MHC II) Antibody - With BSA and Azide

Mouse Monoclonal Antibody [Clone 169-1B5.2 ]

Catalog # AH11431

## Product Information

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<b>Application</b>	IF, FC
<b>Primary Accession</b>	<a href="#">P01903</a>
<b>Other Accession</b>	<a href="#">3122</a> , <a href="#">520048</a>
<b>Reactivity</b>	Human, Bovine, Cat
<b>Host</b>	Mouse
<b>Clonality</b>	Monoclonal
<b>Isotype</b>	Mouse / IgG2b, kappa
<b>Clone Names</b>	169-1B5.2
<b>Calculated MW</b>	28621

## Additional Information

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<b>Gene ID</b>	3122
<b>Other Names</b>	HLA class II histocompatibility antigen, DR alpha chain, MHC class II antigen DRA, HLA-DRA, HLA-DRA1
<b>Application Note</b>	IF~~1:50~200 FC~~1:10~50
<b>Storage</b>	Store at 2 to 8°C. Antibody is stable for 24 months.
<b>Precautions</b>	HLA-DRA (MHC II) Antibody - With BSA and Azide is for research use only and not for use in diagnostic or therapeutic procedures.

## Protein Information

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<b>Name</b>	HLA-DRA
<b>Synonyms</b>	HLA-DRA1
<b>Function</b>	An alpha chain of antigen-presenting major histocompatibility complex class II (MHCII) molecule. In complex with the beta chain HLA- DRB, displays antigenic peptides on professional antigen presenting cells (APCs) for recognition by alpha-beta T cell receptor (TCR) on HLA-DR-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: <a href="#">15265931</a> , PubMed: <a href="#">15322540</a> , PubMed: <a href="#">17334368</a> , PubMed: <a href="#">22327072</a> , PubMed: <a href="#">24190431</a> , PubMed: <a href="#">27591323</a> , PubMed: <a href="#">29884618</a> , PubMed: <a href="#">31495665</a> , PubMed: <a href="#">8145819</a> , PubMed: <a href="#">9075930</a> ). 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. Early endosome membrane; Single-pass type I membrane protein. Late endosome membrane; Single-pass type I membrane protein. Lysosome membrane; Single-pass type I membrane protein. Autolysosome membrane; Single-pass type I membrane protein. Note=The MHCII complex transits through a number of intracellular compartments in the endocytic pathway until it reaches the cell membrane for antigen presentation (PubMed:18305173, PubMed:9075930). Component of immunological synapses at the interface between T cell and APC (PubMed:15322540, PubMed:29884618).

### Tissue Location

Expressed in professional APCs: macrophages, dendritic cells and B cells (at protein level) (PubMed:15322540, PubMed:23783831, PubMed:31495665). Expressed in thymic epithelial cells (at protein level) (PubMed:23783831).

## Background

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This antibody detects a monomorphic general framework determinant of HLA-DR Class II antigen. It does not cross react with HLA-DP and HLA-DQ. HLA-DR is a heterodimeric cell surface glycoprotein comprised of a 36kDa alpha (heavy) chain and a 28kDa 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 cytoplasmic staining. True histiocytic neoplasms are similarly positive. HLA-DR antigens also occur on a variety of epithelial cells and their corresponding neoplastic counterparts.

## References

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Vaughan J. et al. (1982): Proceedings of the second Asia and Oceania histocompatibility workshop conference. Melbourne. p221. | Kuramochi T. et al. (1987): Cross-reactivity between human and feline Ia antigens, using a monoclonal antibody HLA-D.m1. Amer. J. Vet. Res. 48:186-188

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.