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# HLA-DRA Antibody
**Mouse Monoclonal Antibody (Mab)**
**Catalog # AM1941b**

## Specification

### HLA-DRA Antibody - Product Information

| | |
|---|---|
| Application | **WB,E** |
| Primary Accession | P01903 |
| Other Accession | NP_061984.2 |
| Reactivity | **Human** |
| Host | **Mouse** |
| Clonality | **Monoclonal** |
| Isotype | **IgM,k** |
| Antigen Region | **48-75** |

### HLA-DRA Antibody - Additional Information

**Gene ID** 3122

**Other Names**
HLA class II histocompatibility antigen, DR alpha chain, MHC class II antigen DRA, HLA-DRA, HLA-DRA1

**Target/Specificity**
This HLA-DRA antibody is generated from mice immunized with a KLH conjugated synthetic peptide between 48-75 amino acids from human HLA-DRA.

**Dilution**
WB~~1:100
E~~Use at an assay dependent concentration.

**Format**
Purified monoclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Euglobin precipitation followed by dialysis against PBS.

**Storage**
Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

**Precautions**
HLA-DRA Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

### HLA-DRA Antibody - Protein Information

**Name** HLA-DRA

**Synonyms** HLA-DRA1

**Function** 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:15265931, PubMed:15322540, PubMed:17334368, PubMed:22327072, PubMed:24190431, PubMed:27591323, PubMed:29884618, PubMed:31495665, PubMed:8145819, PubMed:9075930). 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).

## HLA-DRA Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

## HLA-DRA Antibody - Images

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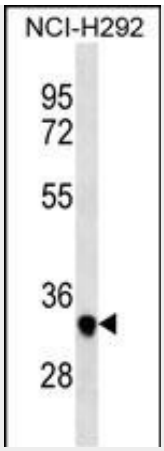


HLA-DRA Antibody (Cat. #AM1941b) western blot analysis in NCI-H292 cell line lysates (35µg/lane).This demonstrates the HLA-DRA antibody detected the HLA-DRA protein (arrow).

## HLA-DRA Antibody - Background

HLA-DRA is one of the HLA class II alpha chain paralogues. This class II molecule is a heterodimer consisting of an alpha and a beta chain, both anchored in the membrane. It plays a central role in the immune system by presenting peptides derived from extracellular proteins. Class II molecules are expressed in antigen presenting cells (APC: B lymphocytes, dendritic cells, macrophages). The alpha chain is approximately 33-35 kDa and its gene contains 5 exons. Exon 1 encodes the leader peptide, exons 2 and 3 encode the two extracellular domains, and exon 4 encodes the transmembrane domain and the cytoplasmic tail. DRA does not have polymorphisms in the peptide binding part and acts as the sole alpha chain for DRB1, DRB3, DRB4 and DRB5.

## HLA-DRA Antibody - References

Bailey, S.D., et al. Diabetes Care 33(10):2250-2253(2010)
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Hamza, T.H., et al. Nat. Genet. 42(9):781-785(2010)
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