

**Mouse Monoclonal Antibody to HLA-DRA**  
**Purified Mouse Monoclonal Antibody**  
**Catalog # AO2442a****Specification**

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**Mouse Monoclonal Antibody to HLA-DRA - Product Information**

Application	<b>E, WB, FC, ICC</b>
Primary Accession	<a href="#">P01903</a>
Reactivity	<b>Human</b>
Host	<b>Mouse</b>
Clonality	<b>Monoclonal</b>
Isotype	<b>Mouse IgG2b</b>
Calculated MW	<b>28.6kDa KDa</b>

**Description**

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. ;

**Immunogen**

Purified recombinant fragment of human HLA-DRA (AA: 26-254) expressed in E. Coli.

**Formulation**

Purified antibody in PBS with 0.05% sodium azide

**Application Note**

ELISA: 1/10000; WB: 1/500 - 1/2000; ICC: 1/100 - 1/500; FCM: 1/200 - 1/400

**Mouse Monoclonal Antibody to HLA-DRA - Additional Information**

**Gene ID** 3122

**Other Names**

MLRW; HLA-DRA1

**Storage**

Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

**Precautions**

Mouse Monoclonal Antibody to HLA-DRA is for research use only and not for use in diagnostic or therapeutic procedures.

**Mouse Monoclonal Antibody to HLA-DRA - 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:<a href="http://www.uniprot.org/citations/15265931" target="\_blank">15265931</a>, PubMed:<a href="http://www.uniprot.org/citations/15322540" target="\_blank">15322540</a>, PubMed:<a href="http://www.uniprot.org/citations/17334368" target="\_blank">17334368</a>, PubMed:<a href="http://www.uniprot.org/citations/22327072" target="\_blank">22327072</a>, PubMed:<a href="http://www.uniprot.org/citations/24190431" target="\_blank">24190431</a>, PubMed:<a href="http://www.uniprot.org/citations/27591323" target="\_blank">27591323</a>, PubMed:<a href="http://www.uniprot.org/citations/29884618" target="\_blank">29884618</a>, PubMed:<a href="http://www.uniprot.org/citations/31495665" target="\_blank">31495665</a>, PubMed:<a href="http://www.uniprot.org/citations/8145819" target="\_blank">8145819</a>, PubMed:<a href="http://www.uniprot.org/citations/9075930" target="\_blank">9075930</a>). Typically presents extracellular peptide antigens of 10 to 30 amino acids that arise from proteolysis of endocytosed antigens in lysosomes (PubMed:<a href="http://www.uniprot.org/citations/8145819" target="\_blank">8145819</a>). 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:<a href="http://www.uniprot.org/citations/31495665" target="\_blank">31495665</a>). 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:<a href="http://www.uniprot.org/citations/17182262" target="\_blank">17182262</a>, PubMed:<a href="http://www.uniprot.org/citations/23783831" target="\_blank">23783831</a>). 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:<a href="http://www.uniprot.org/citations/25413013" target="\_blank">25413013</a>). 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:<a href="http://www.uniprot.org/citations/8145819" target="\_blank">8145819</a>).

### 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

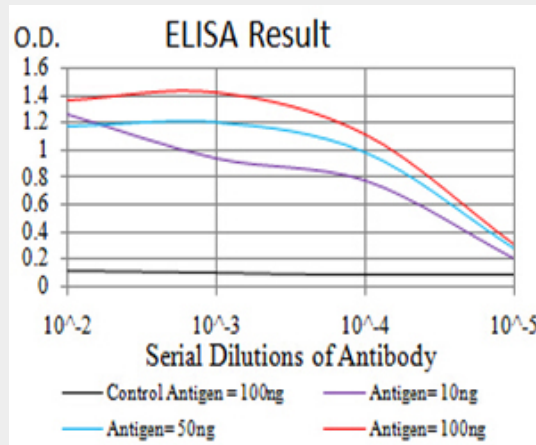
Expressed in professional APCs: macrophages, dendritic cells and B cells (at protein level) (PubMed:15322540, PubMed:23783831, PubMed:31495665). Expressed in thymic epithelial cells (at protein level) (PubMed:23783831).

## Mouse Monoclonal Antibody to HLA-DRA - Protocols

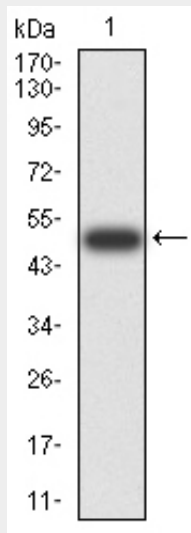
Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

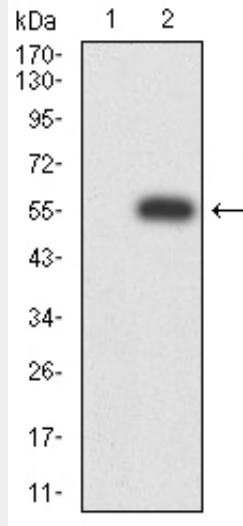
**Mouse Monoclonal Antibody to HLA-DRA - Images**



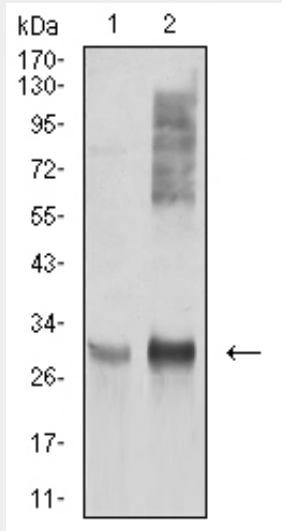
Black line: Control Antigen (100 ng);Purple line: Antigen (10ng); Blue line: Antigen (50 ng); Red line:Antigen (100 ng)



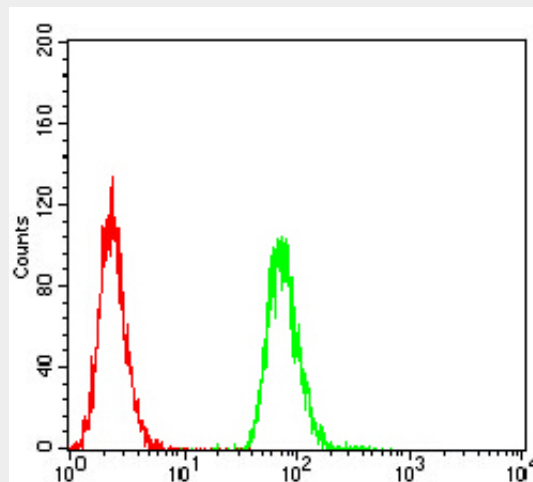
Western blot analysis using HLA-DRA mAb against human HLA-DRA (AA: 26-254) recombinant protein. (Expected MW is 51.5 kDa)



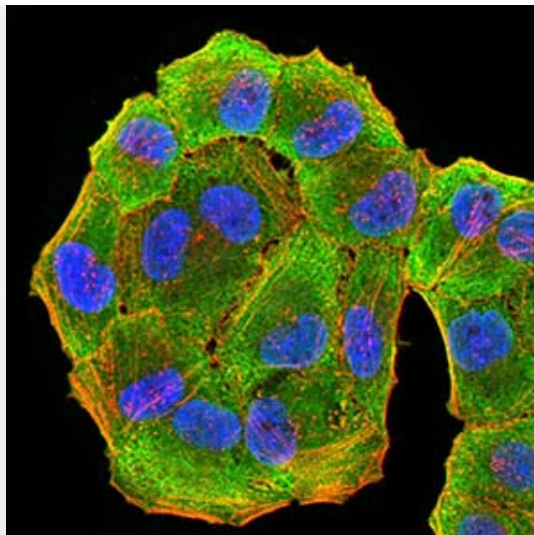
Western blot analysis using HLA-DRA mAb against HEK293 (1) and HLA-DRA (AA: 26-254)-hIgGFc transfected HEK293 (2) cell lysate.



Western blot analysis using HLA-DRA mouse mAb against Ramos (1), and Raji (2) cell lysate.



Flow cytometric analysis of MCF-7 cells using HLA-DRA mouse mAb (green) and negative control (red).



Immunofluorescence analysis of HeLa cells using HLA-DRA mouse mAb (green). Blue: DRAQ5 fluorescent DNA dye. Red: Actin filaments have been labeled with Alexa Fluor- 555 phalloidin. Secondary antibody from Fisher

#### **Mouse Monoclonal Antibody to HLA-DRA - References**

1.Int J Immunogenet. 2014 Dec;41(6):508-11. ; 2.Am J Rhinol Allergy. 2012 Jan-Feb;26(1):12-7. ;