

# **HLA-DRA Antibody (N-term)**

Purified Rabbit Polyclonal Antibody (Pab) Catalog # AP6799A

# **Product Information**

**Application** WB, IHC-P, FC, E

**Primary Accession** P01903 Reactivity Human Host Rabbit Clonality Polyclonal Isotype Rabbit IgG **Clone Names** RB19526 **Calculated MW** 28621 **Antigen Region** 48-75

# **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 rabbits immunized with a KLH

conjugated synthetic peptide between 48-75 amino acids from the N-terminal

region of human HLA-DRA.

**Dilution** WB~~1:1000 IHC-P~~1:100~500 FC~~1:10~50 E~~Use at an assay dependent

concentration.

Format Purified polyclonal antibody supplied in PBS with 0.05% (V/V) Proclin 300. This

antibody is prepared by Saturated Ammonium Sulfate (SAS) 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 (N-term) is for research use only and not for use in

diagnostic or therapeutic procedures.

## **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: <u>29884618</u>, PubMed: <u>31495665</u>, PubMed: <u>8145819</u>, PubMed: <u>9075930</u>). 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**

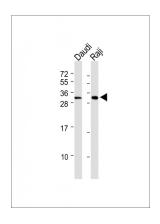
HLA-DRA is one of the HLA class II alpha chain paralogues. This class II molecule is a heterodimer consisting of an alpha and a beta chain, both anchored in the membrane. It plays a central role in the immune system by presenting peptides derived from extracellular proteins. Class II molecules are expressed in antigen presenting cells (APC: B lymphocytes, dendritic cells, macrophages).

# References

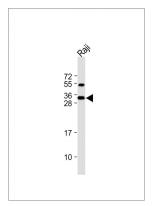
De Jager, et.al., Nat. Genet. 41 (7), 776-782 (2009)

# **Images**

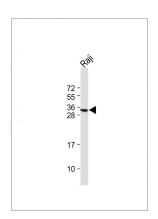
All lanes: Anti-NSUN7 Antibody (C-term) at 1:500 dilution Lane 1: Daudi whole cell lysate Lane 2: Raji whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat



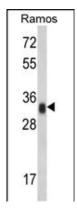
Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ASP1615) at 1/15000 dilution. Observed band size: 32kDa Blocking/Dilution buffer: 5% NFDM/TBST.



All lanes: Anti-HLA-DRA Antibody (N-term) at 1:500 dilution Lane 1: Raji whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ASP1615) at 1/15000 dilution. Observed band size: 32kDa Blocking/Dilution buffer: 5% NFDM/TBST.

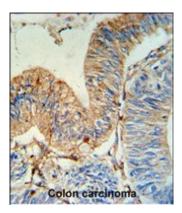


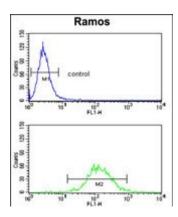
All lanes: Anti-HLA-DRA Antibody (N-term) at 1:500 dilution Lane 1: Raji whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ASP1615) at 1/15000 dilution. Observed band size: 32kDa Blocking/Dilution buffer: 5% NFDM/TBST.



Western blot analysis of HLA-DRA Antibody (N-term) (Cat. #AP6799a) in Ramos cell line lysates (35ug/lane). HLA-DRA (arrow) was detected using the purified Pab.

HLA-DRA Antibody (N-term) (Cat. #AP6799a) IHC analysis in formalin fixed and paraffin embedded human colon carcinoma followed by peroxidase conjugation of the secondary antibody and DAB staining. This data demonstrates the use of the HLA-DRA Antibody (N-term) for immunohistochemistry. Clinical relevance has not been evaluated.





HLA-DRA Antibody (N-term) (Cat. #AP6799a) flow cytometry analysis of Ramos cells (bottom histogram) compared to a negative control cell (top histogram).FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.

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