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HLA-DPA1 Antibody (C-term) Blocking Peptide

Synthetic peptide
Catalog # BP17796b

Specification

HLA-DPA1 Antibody (C-term) Blocking Peptide - Product Information

Primary Accession P20036

HLA-DPA1 Antibody (C-term) Blocking Peptide - Additional Information

Gene ID 3113

Other Names
HLA class II histocompatibility antigen, DP alpha 1 chain, DP(W3), DP(W4), HLA-SB alpha chain, MHC class II DP3-alpha, MHC class II DPA1, HLA-DPA1, HLA-DP1A, HLASB

Format
Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

Precautions
This product is for research use only. Not for use in diagnostic or therapeutic procedures.

HLA-DPA1 Antibody (C-term) Blocking Peptide - Protein Information

Name HLA-DPA1

Synonyms HLA-DP1A, HLASB

Function
Binds peptides derived from antigens that access the endocytic route of antigen presenting cells (APC) and presents them on the cell surface for recognition by the CD4 T-cells. The peptide binding cleft accommodates peptides of 10-30 residues. The peptides presented by MHC class II molecules are generated mostly by degradation of proteins that access the endocytic route, where they are processed by lysosomal proteases and other hydrolases. Exogenous antigens that have been endocytosed by the APC are thus readily available for presentation via MHC II molecules, and for this reason this antigen presentation pathway is usually referred to as exogenous. As membrane proteins on their way to degradation in lysosomes as part of their normal turn-over are also contained in the endosomal/lysosomal compartments, exogenous antigens must compete with those derived from endogenous components. Autophagy is also a source of endogenous peptides, autophagosomes constitutively fuse with MHC class II loading compartments. In addition to APCs, other cells of the gastrointestinal tract, such as epithelial cells, express MHC class II molecules and CD74 and act as APCs, which is an unusual trait of the GI tract. To produce a MHC class II molecule that presents an antigen, three MHC class II molecules (heterodimers of an alpha and a beta chain) associate with a CD74 trimer in the ER to form a heterononamer. Soon after the

entry of this complex into the endosomal/lysosomal system where antigen processing occurs, CD74 undergoes a sequential degradation by various proteases, including CTSS and CTSL, leaving a small fragment termed CLIP (class-II-associated invariant chain peptide). The removal of CLIP is facilitated by HLA-DM via direct binding to the alpha-beta-CLIP complex so that CLIP is released. HLA-DM stabilizes MHC class II molecules until primary high affinity antigenic peptides are bound. The MHC II molecule bound to a peptide is then transported to the cell membrane surface. In B-cells, the interaction between HLA-DM and MHC class II molecules is regulated by HLA-DO. Primary dendritic cells (DCs) also to express HLA-DO. Lysosomal microenvironment has been implicated in the regulation of antigen loading into MHC II molecules, increased acidification produces increased proteolysis and efficient peptide loading.

Cellular Location
Cell membrane; Single-pass type I membrane protein. Endoplasmic reticulum membrane; Single-pass type I membrane protein. Golgi apparatus, trans-Golgi network membrane; Single-pass type I membrane protein. Endosome membrane; Single-pass type I membrane protein. Lysosome membrane; Single-pass type I membrane protein 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

HLA-DPA1 Antibody (C-term) Blocking Peptide - Protocols

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

- Blocking Peptides

HLA-DPA1 Antibody (C-term) Blocking Peptide - Images

HLA-DPA1 Antibody (C-term) Blocking Peptide - Background

HLA-DPA1 belongs to the HLA class II alpha chainparalogues. This class II molecule is a heterodimer consisting ofan alpha (DPA) and a beta (DPB) chain, both anchored in themembrane. It plays a central role in the immune system bypresenting peptides derived from extracellular proteins. Class IImolecules are expressed in antigen presenting cells (APC: Blymphocytes, dendritic cells, macrophages). The alpha chain isapproximately 33-35 kDa and its gene contains 5 exons. Exon oneencodes the leader peptide, exons 2 and 3 encode the twoextracellular domains, exon 4 encodes the transmembrane domain andthe cytoplasmic tail. Within the DP molecule both the alpha chainand the beta chain contain the polymorphisms specifying the peptidebinding specificities, resulting in up to 4 different molecules.

HLA-DPA1 Antibody (C-term) Blocking Peptide - References

Bailey, S.D., et al. Diabetes Care 33(10):2250-2253(2010)Varney, M.D., et al. Diabetes 59(8):2055-2062(2010)Ovsyannikova, I.G., et al. PLoS ONE 5 (7), E11806 (2010) :Mychaleckyj, J.C., et al. Clin Trials 7 (1 SUPPL), S75-S87 (2010) :Pacheco, P.R., et al. BMC Res Notes 3, 134 (2010) :