

Product datasheet

Anti-MHC Class II antibody [ER-TR3] (Biotin) ab15631

1 References

Overview

Product name	Anti-MHC Class II antibody [ER-TR3] (Biotin)
Description	Rat monoclonal [ER-TR3] to MHC Class II (Biotin)
Conjugation	Biotin
Specificity	The antigen is found on B-cells, interdigitating cells and macrophages in peripheral lymphoid organs but is absent from T-cells. It is also expressed as a fine reticular pattern on stromal thymic cells of the cortex and as a confluent pattern on stromal thymic cells of the medulla.
Tested applications	Suitable for: IHC-Fr, ICC/IF, Flow Cyt
Species reactivity	Reacts with: Mouse Does not react with: Human
Immunogen	Full length native protein (purified) (Mouse).
Positive control	Mouse dendritic cells, B-cells and macrophages.

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Store at -20°C or -80°C. Avoid freeze / thaw cycle.
Storage buffer	Preservative: 0.01% Thimerosal Constituents: 10mg/ml BSA, PBS, pH 7.2
Purity	Affinity purified
Clonality	Monoclonal
Clone number	ER-TR3
Isotype	IgG2b

Applications

Our [Abpromise guarantee](#) covers the use of **ab15631** in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
IHC-Fr		1/100.
ICC/IF		Use at an assay dependent concentration. PubMed: 24465914
Flow Cyt		Use at an assay dependent concentration. ab18542 -Rat monoclonal IgG2b, is suitable for use as an isotype control with this antibody.

Target

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 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.

Sequence similarities

Belongs to the MHC class II family.
Contains 1 Ig-like C1-type (immunoglobulin-like) domain.

Cellular localization

Cell membrane. Endoplasmic reticulum membrane. Golgi apparatus > trans-Golgi network membrane. Endosome membrane. Lysosome membrane. 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.

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