abcam

Product datasheet

Anti-MHC Class II antibody [MRC OX-6] ab23990

★★★★★ 6 Abreviews 51 References 4 Images

Overview

Product name	Anti-MHC Class II antibody [MRC OX-6]
Description	Mouse monoclonal [MRC OX-6] to MHC Class II
Host species	Mouse
Tested applications	**Suitable for:** ICC/IF, IHC-P
Species reactivity	**Reacts with:** Mouse, Rat
Immunogen	Tissue, cells or virus. This information is proprietary to Abcam and/or its suppliers.
Positive control	IHC-P: Rat spleen tissue; IHC-fr: Rat spleen tissue. ICC/IF: Mouse and rat splenocytes.
General notes	This antibody clone is manufactured by Abcam. If you require a custom buffer formulation or conjugation for your experiments, please contact **orders@abcam.com**. The Life Science industry has been in the grips of a reproducibility crisis for a number of years. Abcam is leading the way in addressing this with our range of recombinant monoclonal antibodies and knockout edited cell lines for gold-standard validation. Please check that this product meets your needs before purchasing. If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, along with publications, customer reviews and Q&As

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C long term.
Storage buffer	pH: 7.40 Preservative: 0.02% Sodium azide Constituents: PBS, 6.97% L-Arginine
Purity	Protein G purified
Clonality	Monoclonal
Clone number	MRC OX-6
Myeloma	NS1
Isotype	IgG1

Applications

The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab23990 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
ICC/IF	★★★★☆ **(2)**	Use at an assay dependent concentration.
IHC-P		Use at an assay dependent concentration.

Target

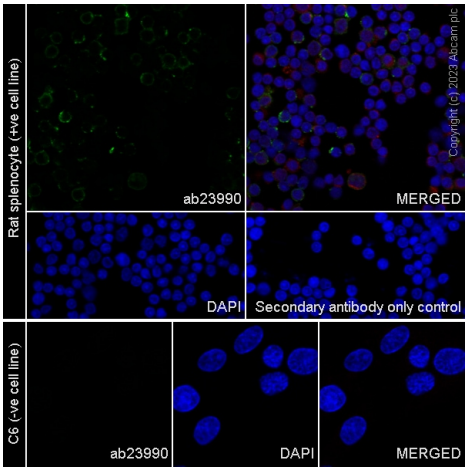
Function Binds peptides derived from antigens that access the endocytic route of antigen presenting cells (APC) and presents them on the cell surface for recognition by the CD4 T-cells. The peptide binding cleft accomodates peptides of 10-30 residues. The peptides presented by MHC class II molecules 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 an 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 miroenvironment 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.

Images

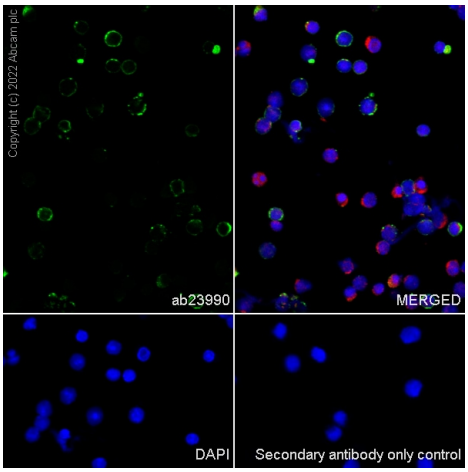
Images



Immunocytochemistry/ Immunofluorescence - Anti-MHC Class II antibody [MRC OX-6] (ab23990)

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized Rat splenocyte cells labelling MHC Class II with ab23990 at 1/100 dilution (10.63 ug/ml), followed by **ab150117** Goat Anti-Mouse IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 (2 ug/ml) dilution (Green). **ab206369** Anti-beta Tubulin rabbit monoclonal antibody (Alexa Fluor® 594) was used at 1/100 dilution (5µg/mL) as counterstain for tubulin (Red). The Nuclear counterstain was DAPI (Blue). Secondary antibody only control: Secondary antibody is **ab150117** Goat Anti-Mouse IgG H&L (Alexa Fluor® 488) preadsorbed antibody.

Confocal image showing membranous and cytoplasmic staining in subsets of rat splenocyte.
Negative control: C6.
Image was taken with a confocal microscope(Leica-Microsystems, TCS SP8).



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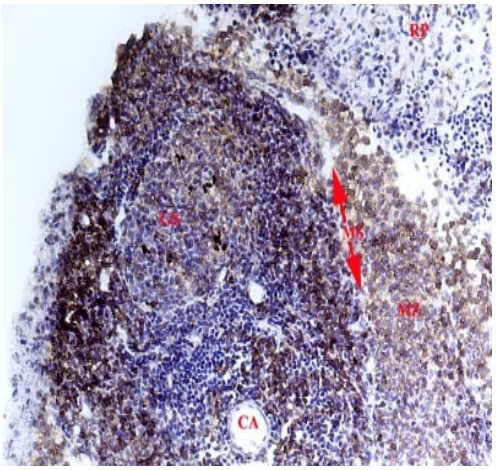
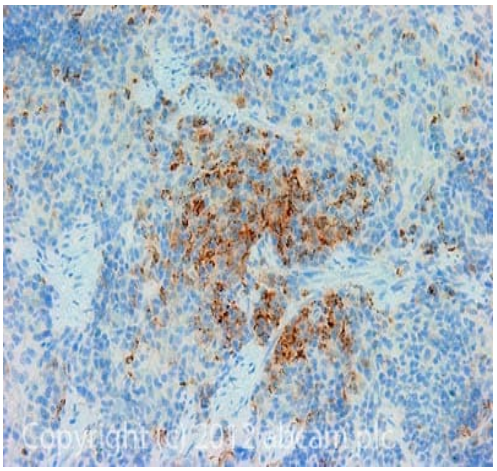


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-MHC Class II antibody [MRC OX-6] (ab23990)

This image is courtesy of an abreview submitted by Carl Hobbs, King's College London, United Kingdom

Immunohistochemistical detection of MHC Class II using antibody ab23990 on PFA-fixed rat spleen tissue sections. Antibody diluted at 1/100 and incubated for2 hours in TBS/BSA/Tween/azide. Secondary antibody: anti mouse IgG conjugated to biotin (1/100). After dissection of spleen from PFA-perfused specimen it was sampled and further immersion-fixed for two Hrs. After subsequent immersion in 30% Sucrose, specimens were snap-frozen. Before immunostaining, the 8 micron sections were placed in a 60 degree C oven for 60 mins to enhance adhesion. The submitted image shows white pulp (PALS) and a small area of red pulp (RP-upper left). The Periarteriolar Sheath (PALS) with it's Central Arteriole/artery (CA)shows many positive cells (B-lymphocytes and Macrophages) and negative lymphocytes (T-cells?). The Marginal Sinus (MS) is clearly seen between the PALS and the Marginal Zone (MZ). There is a clear Germinal Centre (GS) in this image.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-MHC Class II antibody [MRC OX-6] (ab23990)

IHC image of MHC Class II staining in Rat normal spleen formalin fixed paraffin embedded tissue section, performed on a Leica BondTM system using the standard protocol F. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH6, epitope retrieval solution 1) for 20 mins. The section was then incubated with ab23990, 10µg/ml, for 15 mins at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX.

For other IHC staining systems (automated and non-automated) customers should optimize variable parameters such as antigen retrieval conditions, primary antibody concentration and antibody incubation times.

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