

Human HLA-DQ (MHC Class II) Antibody

Purified *in vivo* GOLD™ Functional Grade

Monoclonal Antibody

Product Information

Product No.: H262
Clone: 1a3
RRID: AB_2737520
Isotype: Mouse IgG2a
Storage: Sterile 2-8°C

Product Description

Specificity:

Clone 1a3 recognizes a monomorphic epitope on human HLA-DQ1. It does not cross-react with HLA-DR or HLA-DP.

Antigen Distribution:

HLA-DQ is expressed on antigen-presenting cells, including macrophages, monocytes, DCs, and B cells, and activated T cells.

Background:

HLA-DQ antibody, clone 1a3, recognizes the major histocompatibility complex (MHC) class II molecule Human Leukocyte Antigen - DQ isotype (HLA-DQ). MHC class II is constitutively expressed on human professional antigen-presenting cells (APCs), including macrophages/monocytes, dendritic cells (DCs), and B cells, and is induced on T cells upon activation². HLA-DQ consists of two transmembrane proteins, a 35 kDa α (heavy) chain and 29 kDa β (light) chain³ encoded by the HLA-DQA1 and HLA-DQB1 genes, respectively, located in the HLA complex of chromosome 6. The N-terminal α 1 and β 1 domains form the antigen-binding groove, which binds 13-25 aa peptides derived from exogenous antigens⁴. On APCs, MHC class II plays a critical role in the adaptive immune response by presenting phagocytosed antigens to helper CD4 T cells. The T cell receptor (TCR)/CD3 complex of CD4 T cells interacts with peptide-MHC class II, which induces CD4 T cell activation leading to the coordination and regulation of other effector cells. CD4 molecules also bind to MHC class II, which helps augment TCR signaling⁵. It has also been demonstrated that MHC class II express on activated T cells are capable of antigen presentation⁶ and can transduce signals into T cells, enhancing T cell proliferation and activity⁷. Specific alleles of HLA-DQ are associated with autoimmune diseases, including celiac disease⁸ and type 1 diabetes⁹, and graft-versus-host disease¹⁰.

Known Reactivity Species:

Human

Format:

Purified *in vivo* GOLD™ Functional Grade

Immunogen:

Unknown

Formulation

This monoclonal antibody is aseptically packaged and formulated in 0.01 M phosphate buffered saline (150 mM NaCl) PBS pH 7.2 - 7.4 with no carrier protein, potassium, calcium or preservatives added. Due to inherent biochemical properties of antibodies, certain products may be prone to precipitation over time. Precipitation may be removed by aseptic centrifugation and/or filtration.

Purity

≥95% monomer by analytical SEC, >95% by SDS Page

Endotoxin

< 1.0 EU/mg as determined by the LAL method

Storage and Stability

Functional grade preclinical antibodies may be stored sterile as received at 2-8°C for up to one month. For longer term storage, aseptically aliquot in working volumes without diluting and store at ≤ -70°C. Avoid Repeated Freeze Thaw Cycles.

Product Preparation

Functional grade preclinical antibodies are manufactured in an animal free facility using *in vitro* cell culture techniques and are purified by a multi-step process including the use of protein A or G to assure extremely low levels of endotoxins, leachable protein A or aggregates.

Applications

Applications and Recommended Usage (Quality Tested By Leinco):

FC The suggested concentration for this HLA-DQ (Clone 1a3) antibody for staining cells in flow cytometry is ≤ 1.0 µg per 10⁶ cells in a volume of 100 µl or 100µl of whole blood. Titration of the reagent is recommended for optimal performance for each application.

WB The suggested concentration for this HLA-DQ (Clone 1a3) antibody for use in western blotting is 1-10 µg/ml.

ELISA

Other Applications Reported in Literature:

IP

Country of Origin

USA

References

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