Leinco Technologies, Inc.
excellence in early discovery research™

Human HLA-DP (MHC Class II) Monomorphic Antibody

Purified in vivo GOLD™ Functional Grade

Monoclonal Antibody

Product Information

Product No.: H260

Clone: B7/21

RRID: AB_2737518

Isotype: Mouse IgG3

Storage: Sterile 2-8°C

Product Description

Specificity:
Clone B7/21 recognizes a monomorphic epitope on human HLA-DP1, -DP2, -DP3, -DP4, and -DP5. It does not cross-react with HLA-DR or HLA-DQ.

Antigen Distribution:
HLA-DP is expressed on antigen-presenting cells, including macrophages, monocytes, DCs, and B cells, and activated T cells.

Background:
HLA-DP antibody, clone B7/21, recognizes the major histocompatibility complex (MHC) class II molecule Human Leukocyte Antigen - DP isotype (HLA-DP). 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 activation[1]. HLA-DP consists of two transmembrane proteins, a 35 kDa α (heavy) chain and 29 kDa β (light) chain[2] encoded by the HLA-DPA1 and HLA-DPB1 genes, respectively, located in the HLA complex of chromosome 6. The N-terminal α1 and β1 domains form the antigen-binding groove, which binds 13-25 aa peptides derived from exogenous antigens[3]. 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 signaling[4]. It has also been demonstrated that MHC class II express on activated T cells are capable of antigen presentation[5] and can transduce signals into T cells, enhancing T cell proliferation and activity[6]. High HLA-DP expression is associated with an increased risk of graft-versus-host disease[7]. Specific alleles of HLA-DP are associated with autoimmune diseases, including rheumatoid arthritis[8].

Known Reactivity Species:
Human

Format:
Purified *in vivo* 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

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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

Other Applications Reported in Literature:
ICC

Country of Origin
USA

References
1. Holling TM, et al. (2004) Hum Immunol. 65(4):282-90.
2. Mitaksov V & Fremont DH. (2006) J Biol Chem. 281(15):10618-25.
3. Wieczorek M, et al. (2017) Front Immunol. 8:292.
4. Artyomov MN, et al. (2010) Proc Natl Acad Sci USA. 107(39):16916-16921.
5. Barnaba V, et al. (1994) Eur J Immunol. 24(1):71-5.
6. Di Rosa F, et al. (1993) Hum Immunol. 38(4):251-60.
7. Petersdorf EW, et al. (2015) N Engl J Med. 373(7):599-609.
8. Raychaudhuri S, et al. (2012) Nat Genet. 44(3):291-6.