Leinco Technologies, Inc.
excellence in early discovery research™

Human HLA-DR (MHC Class II) Antibody

Purified *in vivo* PLATINUM™ Functional Grade

Monoclonal Antibody

Product Information

Product No.:	H461
Clone:	L243
RRID:	AB_2893097
Isotype:	Mouse IgG2a
Storage:	Sterile 2° to 8°C

Product Description

Specificity:
Clone L243 recognizes a conformational epitope on the human MHC class II molecule HLA-DRα, which depends on the correct folding of the αβ heterodimer[1]. It does not cross-react with HLA-DP or HLA-DQ.

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

Background:
HLA-DR antibody, clone L243, recognizes the major histocompatibility complex (MHC) class II molecule Human Leukocyte Antigen - DR isotype (HLA-DR). 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[2]. HLA-DR consists of two transmembrane proteins, a 35 kDa α (heavy) chain and 29 kDa β (light) chain[3] encoded by the HLA-DRA and HLA-DRB1, HLA-DRB3, HLA-DRB4, and HLA-DRB5 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[4]. 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[5]. It has also been demonstrated that MHC class II express on activated T cells are capable of antigen presentation[6] and can transduce signals into T cells, enhancing T cell proliferation and activity[7]. HLA-DR expression is a marker of T cell activation and correlates with disease activity in patients with autoimmune disease[8] and rapid progression in HIV infection[9]. Specific alleles of HLA-DR are associated with autoimmune diseases, including rheumatoid arthritis[10].

Known Reactivity Species:
Baboon, Chimpanzee, Cynomolgus Monkey, Marmoset, Rhesus Monkey, Squirrel Monkey, Canine, Human

Format:
Purified *in vivo* PLATINUM™ 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.

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Purity
≥98% monomer by analytical SEC, >98% by SDS Page

Endotoxin
<0.5 EU/mg as determined by the LAL method

Storage and Stability
Functional grade preclinical antibodies may be stored sterile as received at 2° to 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.

Pathogen Testing
To protect mouse colonies from infection by pathogens and to assure that experimental preclinical data is not affected by such pathogens, all of Leinco's Purified Functional PLATINUM™ antibodies are tested and guaranteed to be negative for all pathogens in the IDEXX IMPACT I Mouse Profile.

Applications
Applications and Recommended Usage (Quality Tested By Leinco):
FC The suggested concentration for this HLA-DR (Clone L243) antibody for staining cells in flow cytometry is ≤ 0.5 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-DR (Clone L243) antibody for use in western blotting is 1-10 µg/ml.

Other Applications Reported in Literature:
IHC FF
CyTOF®
B
Depletion
IP

Country of Origin
USA

References
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3) Mitaksov V, (2006) J Biol Chem. 281(15):10618-25
4) Wieczorek M, et al. (2017) Front Immunol. 8:292
5) Artyomov MN, et al. (2010) Proc Natl Acad Sci USA. 107(39):16916-16921
6) Barnaba V, et al. (1994) Eur J Immunol. 24(1):71-5
7) Di Rosa F, et al. (1993) Hum Immunol. 38(4):251-60
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9) Langford SE, Ananworanich J, Cooper DA. (2007) AIDS Res Ther. 2007;4:11
10) Gough SC, Simmonds MJ. (2007) Curr Genomics. 8(7):453-465