# CD74 Antibody – Mouse Monoclonal

## PRODUCT OVERVIEW

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| **Product Name** | CD74, Monoclonal Antibody |
| **Full Product Name** | Mouse Anti-Human CD74-LE/AF |
| **Product Gene Name** | anti-CD74 antibody |
| **Product Synonym Names** | Mouse Anti-Human CD74 - Low Endotoxin/Azide-Free; Mouse Anti-Human CD74 |
| **Clonality** | Monoclonal |
| **Isotype** | Mouse IgG1 |
| **Clone Number** | LN2 |
| **Host** | Mouse |
| **Species Reactivity** | Human |
| **Form/Format** | Low Endotoxin, Azide - Free (LE/AF) |
| **Specificity** | Human CD74<br>CD74 represents a type II integral membrane protein known as MHC Class II-associated invariant chain (Mr 43, 41, 35, 33 kDa). It is moderately expressed on B cells, and weakly on monocytes and macrophages. CD74 is also found on a subset of activated T cells, Langerhans cells, dendritic cells and some epithelial cells. CD74 may play a role in antigen processing and presentation through intracellular transport and expression of Class II molecules on the cell surface.1-4 |
| **Preparation and Storage** | The purified (UNLB) antibody is supplied as 0.1 mg of purified immunoglobulin in 1.0 mL of 100 mM borate buffered saline, pH 8.0. No preservatives or amine-containing buffer salts added. Store at 2- 8 degree C.<br>The fluorescein (FITC) conjugate is supplied as 100 tests in 1.0 mL of PBS/NaN3. Store at 2-8 degree C.<br>The biotin (BIOT) conjugate is supplied as 100 tests in 1.0 mL of PBS/NaN3. Store at 2-8 degree C.<br>The low endotoxin, azide-free (LE/AF) antibody is supplied as 0.5 mg purified immunoglobulin in 1.0 mL of PBS. Aliquot and store at or below -20 degree C.<br>Protect conjugated forms from light. Reagents are stable for the period shown on the label if stored as directed. |
| **Molecular Weight** | 33,516 Da |
| **Chromosome Location** | Chromosome: 5; NC_000005.9 (149781200..149792332, complement). Location: 5q32 |
| **OMIM** | 142790 |
| **3D Structure** | ModBase 3D Structure for P04233 |
| **Characterization** | To insure lot to lot consistency, each batch of product is tested by flow cytometry to conform to characteristics of a standard reference reagent. |
| **Applications Tested/Suitable for anti-CD74 antibody** | Flow Cytometry; Immunohistochemistry (Frozen Sections); Immunoprecipitation |
| **Related Product Information for anti-CD74 antibody** | MBS674316 is an antibody targeting CD74. Also known as Mouse Anti-Human CD74-LE/AF. Reactive in Human. Host: Mouse. |
| **Product References and Citations for anti-CD74 antibody** | 1. Knapp, W., B. Dorken, W.R. GIlks, E.P. Rieber, R.E. Schmidt, H. Stein, A.E.G.K. Von dem Borne, eds. 1989. Leukocyte Typing IV: White Cell Differentiation Antigens, Oxford University Press, Oxford.<br>2. Barclay, A.N., M.H. Brown, S.K.A. Law, A.J. McKnight, M.G. Tomlinson, and P.A. van der Merwe, eds. 1997. The Leukocyte Antigens Facts Book, 2nd Edition, CD74 Section, Academic Press, New York, p. 327.<br>3. Lamb, C.A., J.W. Yewdell, J.R. Bennink, and P. Cresswell. 1991. Proc. Natl. Acad. Sci. USA 88:5998.<br>4. Viville, S., J. Neefjes, V. Lotteau, A. Dierich, M. Lemeur, H. Ploegh, C. Benoist, and D. Mathis. 1993. Cell 72:635. |

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| **Other Notes** | Small volumes of anti-CD74 antibody vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply. |

## ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for CD74. It may not necessarily be applicable to this product.

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| **NCBI GI #** | 119582135 |
| **NCBI GeneID** | 972 |
| **UniProt Primary Accession #** | P04233 |
| **UniProt Secondary Accession #** | Q14597; Q29832; Q5U0J8; Q8SNA0; Q8WLP6; A8K7R1; B4DNE8; D3DQG3; D3DQG4 |
| **UniProt Related Accession #** | O19685; O78208; P04233 |
| **NCBI Official Full Name** | CD74 antigen (invariant polypeptide of major histocompatibility complex, class II antigen-associated), isoform CRA_c |
| **NCBI Official Synonym Full Names** | CD74 molecule, major histocompatibility complex, class II invariant chain |
| **NCBI Official Symbol** | CD74 |
| **NCBI Official Synonym Symbols** | II; DHLAG; HLADG; Ia-GAMMA |
| **UniProt Protein Name** | HLA class II histocompatibility antigen gamma chain |
| **UniProt Synonym Protein Names** | HLA-DR antigens-associated invariant chain; Ia antigen-associated invariant chain; Ii; p33 |
| **Protein Family** | H-2 class II histocompatibility antigen |
| **UniProt Gene Name** | CD74 |
| **UniProt Synonym Gene Names** | DHLAG |
| **UniProt Entry Name** | HG2A_HUMAN |
| **NCBI Protein Information** | HLA class II histocompatibility antigen gamma chain; p33; HLA-DR-gamma; OTTHUMP00000224283; OTTHUMP00000224284; OTTHUMP00000224285; OTTHUMP00000224286; OTTHUMP00000224288; OTTHUMP00000224338; MHC HLA-DR gamma chain; Ia-associated invariant chain; gamma chain of class II antigens; HLA-DR antigens-associated invariant chain; CD74 antigen (invariant polypeptide of major histocompatibility complex, class II antigen-associated) |
| **NCBI Summary for CD74** | The protein encoded by this gene associates with class II major histocompatibility complex (MHC) and is an important chaperone that regulates antigen presentation for immune response. It also serves as cell surface receptor for the cytokine macrophage migration inhibitory factor (MIF) which, when bound to the encoded protein, initiates survival pathways and cell proliferation. This protein also interacts with amyloid precursor protein (APP) and suppresses the production of amyloid beta (Abeta). Multiple alternatively spliced transcript variants encoding different isoforms have been identified. [provided by RefSeq, Aug 2011] |

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| **UniProt Comments for CD74** | Function: Plays a critical role in MHC class II antigen processing by stabilizing peptide-free class II alpha/beta heterodimers in a complex soon after their synthesis and directing transport of the complex from the endoplasmic reticulum to the endosomal/lysosomal system where the antigen processing and binding of antigenic peptides to MHC class II takes place. Serves as cell surface receptor for the cytokine MIF.<br><br>Subunit structure: Homotrimer. In the endoplasmic reticulum (ER) it forms an heterononameric MHC II-Ii complex: 3 MHC class II molecules (heterodimers of an alpha and a beta subunit) bind to the CD74 homotrimer (also known as invariant chain or HLA class II histocompatibility antigen gamma chain). In the endosomal/lysosomal system, the CD74 component undergoes sequential degradation by various proteases, including CTSS and CTSL, leaving a small fragment termed CLIP (class-II-associated invariant chain peptide) attached to the MHC class II molecule (alpha-beta-CLIP complex). This processed complex interacts with HLA_DM and HLA_DO heterodimers in order to release CLIP and facilitate the binding of antigenic peptides to the MHC class II molecules. Ref.12<br><br>Subcellular location: Cell membrane; Single-pass type II membrane protein<br><br>Potential. Endoplasmic reticulum membrane. Golgi apparatus › trans-Golgi network. Endosome. Lysosome. Note: Transits through a number of intracellular compartments in the endocytic pathway. It can either undergo proteolysis or reach the cell membrane.<br><br>Sequence similarities: Contains 1 thyroglobulin type-1 domain.<br><br>Sequence caution: The sequence AAA36304.1 differs from that shown. Reason: Erroneous initiation. |
| **Research Articles on CD74** | **1.** Overexpression of MIF and CD74 in the placenta may up-regulate the CRP level in maternal blood, which may be involved in the pathogenesis of preeclampsia. |
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