ARG53944
anti-HLA DR1 (empty) antibody [MEM-267] (PE)

Package: 50 µg
Store at: 4°C

Summary

Product Description	PE-conjugated Mouse Monoclonal antibody [MEM-267] recognizes HLA DR1 (empty)
Tested Reactivity	Hu
Tested Application	FACS
Specificity	The clone MEM-267 specifically binds to the empty but not peptide-loaded form of HLA-DR1. DR is the isotypes of human MHC Class II molecules expressed on antigen-presenting cells (APC; dendritic cells, B lymphocytes, monocytes, macrophages).
Host	Mouse
Clonality	Monoclonal
Clone	MEM-267
Isotype	IgG2b
Target Name	HLA DR1 (empty)
Immunogen	Purified, insoluble DR1 beta chain (DRB1*0101) expressed in E. coli inclusion bodies.
Conjugation	PE
Alternate Names	HLA-DRB; HLA class II histocompatibility antigen, DRB1-3 chain; SS1; MHC class II antigen DRB1*3; HLA-DR1B; DRw10; Clone P2-beta-3; DRB1

Application Instructions

Application table

Application	Dilution
FACS	1 - 5 µg/ml

Application Note: * The dilutions indicate recommended starting dilutions and the optimal dilutions or concentrations should be determined by the scientist.

Properties

Form	Liquid
Purification Note	The purified antibody is conjugated with R-Phycoerythrin (PE) under optimum conditions. The conjugate is purified by size-exclusion chromatography.
Buffer	PBS, 15 mM Sodium azide and 0.2% (w/v) high-grade protease free BSA
Preservative	15 mM Sodium azide
Stabilizer	0.2% (w/v) high-grade protease free BSA
Concentration	0.1 mg/ml
Storage instruction	Aliquot and store in the dark at 2-8°C. Keep protected from prolonged exposure to light. Avoid repeated freeze/thaw cycles. Suggest spin the vial prior to opening. The antibody solution should be gently mixed before use.

Note	For laboratory research only, not for drug, diagnostic or other use.

Bioinformation

Database links	GeneID: 3123 Human Swiss-port # P01912 Human
Gene Symbol	HLA-DRB1
Gene Full Name	major histocompatibility complex, class II, DR beta 1
Background	HLA-DR1 belongs to the HLA class II beta chain paralogues. The MHC Class II molecule is a heterodimer consisting of an alpha (DRA) and a beta chain (DRB), both anchored in the membrane. It plays a central role in the immune system by presenting peptides derived from extracellular proteins. MHC Class II molecules are expressed in antigen presenting cells (APC). The beta chain is approximately 26-28 kDa. Within the DR molecule the beta chain contains all the polymorphisms specifying the peptide binding specificities. Hundreds of DRB1 alleles have been described and typing for these polymorphisms is routinely done for bone marrow and kidney transplantation.
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 accommodates 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 a 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 microenvironment has been implicated in the regulation of antigen loading into MHC II molecules; increased acidification produces increased proteolysis and efficient peptide loading. [UniProt]
Research Area	Immune System antibody
Calculated Mw	30 kDa
PTM	Ubiquitinated by MARCH1 and MARCH8 at Lys-254 leading to sorting into the endosome system and down-regulation of MHC class II.