
Product Name: KD-Validated MHC class 1 Recombinant Rabbit Monoclonal Antibody
Catalog #: KVAb01776

For research use only.

Summary

Description	KO&KD-Validated antibody
Host	Rabbit
Application	WB,FCM,IHC-P
Reactivity	Human
Conjugation	Unconjugated
Modification	Unmodified
Isotype	Rabbit IgG
Clonality	Rabbit mAb
Form	Liquid
Storage	Aliquot and store at -20°C (valid for 12 months). Avoid freeze/thaw cycles.
Shipping	Ice bags
Buffer	Supplied in PBS (pH 7.4) containing 50% glycerol, and 0.02% sodium azide.
Purification	Affinity purification

Application

Dilution Ratio	WB 1:1,000-1:5,000; FC 1:200-1:2,000; IHC-P 1:100-1:200
Molecular Weight	Calculated MW: 40.8kDa

Antigen Information

Gene Name	HLA-A HLA-A; Major Histocompatibility Complex, Class I, A; HLA Class I Histocompatibility Antigen,
Alternative Names	A Alpha Chain; HLAA; HLA Class I Histocompatibility Antigen, A-1 Alpha Chain; MHC Class I Antigen HLA-A Heavy Chain; Leukocyte Antigen Class I-A; Human Leukocyte Antigen A
Gene ID	3105.0
SwissProt ID	P04439
Immunogen	A synthesized peptide derived from human MHC class 1

Background

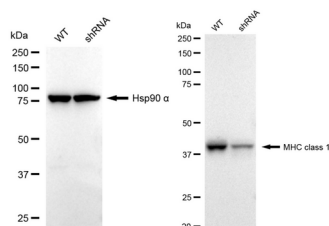
HLA-A belongs to the HLA class I heavy chain paralogues. This class I molecule is a heterodimer consisting of a heavy chain and a light chain (beta-2 microglobulin). The heavy chain is anchored in the membrane. Class I molecules play a central role in the

immune system by presenting peptides derived from the endoplasmic reticulum lumen so that they can be recognized by cytotoxic T cells. They are expressed in nearly all cells. The heavy chain is approximately 45 kDa and its gene contains 8 exons. Exon 1 encodes the leader peptide, exons 2 and 3 encode the alpha1 and alpha2 domains, which both bind the peptide, exon 4 encodes the alpha3 domain, exon 5 encodes the transmembrane region, and exons 6 and 7 encode the cytoplasmic tail. Polymorphisms within exon 2 and exon 3 are responsible for the peptide binding specificity of each class one molecule. Typing for these polymorphisms is routinely done for bone marrow and kidney transplantation. More than 6000 HLA-A alleles have been described. The HLA system plays an important role in the occurrence and outcome of infectious diseases, including those caused by the malaria parasite, the human immunodeficiency virus (HIV), and the severe acute respiratory syndrome coronavirus (SARS-CoV). The structural spike and the nucleocapsid proteins of the novel coronavirus SARS-CoV-2, which causes coronavirus disease 2019 (COVID-19), are reported to contain multiple Class I epitopes with predicted HLA restrictions. Individual HLA genetic variation may help explain different immune responses to a virus across a population.[provided by RefSeq, Aug 2020]

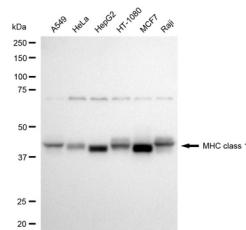
Research Area

Immunology,Cancer

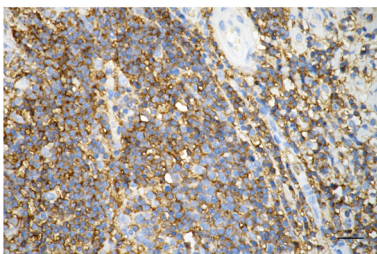
Image Data



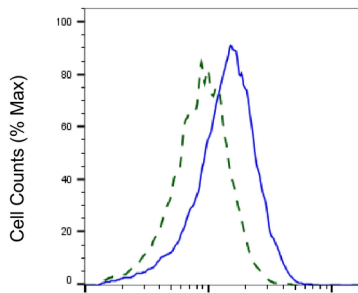
Western blotting analysis using MHC class 1 antibody (KVA01776). MHC class 1 expression in wild type (WT) and HLA-A shRNA knockdown (KD) HT-1080 cells with 20 µg of total cell lysates. Hsp90 α serves as a loading control. The blot was incubated with MHC class 1 antibody (KVA01776, 1:5,000) and HRP-conjugated goat anti-rabbit secondary antibody (APS0635, 1:10,000) respectively. HLA-A, Major Histocompatibility Complex, Class I.



Western blotting analysis using MHC class 1 antibody (KVA01776). Total cell lysates (30 µg) from various cell lines were loaded and separated by SDS-PAGE. The blot was incubated with MHC class 1 antibody (KVA01776, 1:5,000) and HRP-conjugated goat anti-rabbit secondary antibody (APS0635, 1:10,000) respectively.

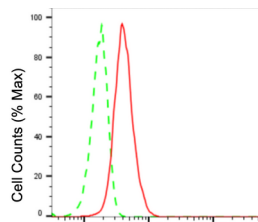


Immunohistochemistry was performed on paraffin-embedded human tonsillitis using MHC class 1 antibody (KVA01776, 1:200). Antigen retrieval was done in sodium citrate buffer (pH 6.0). DAB was used for detection, with hematoxylin counterstaining. Images were acquired using a Nikon Ci-L Plus microscope (40× objective). Scale bar: 25 µm.



MHC class 1-Alexa Fluor® 647

Validation of MHC class 1 knockdown using flow cytometry. Wild-type(WT, Blue) and knockdown(KD, Green) HT-1080 cells were stained with MHC class 1 antibody (KVA01776, 1:2,000) and analyzed using BD flow cytometer.



MHC class 1-Alexa Fluor® 647

Flow cytometric analysis of MHC class 1 expression in HeLa cells using MHC class 1 antibody (KVA01776, 1:2,000). Green, isotype control; red, MHC class 1.