Anti-CD79a Antibody [PDM0-23]

HA601118

Product Type:	Recombinant Mouse monoclonal IgG1, primary antibodies
Species reactivity:	Human
Applications:	WB, IHC-P
Molecular Wt:	Predicted band size: 25 kDa
Clone number:	PDM0-23

Description: CD79a plays multiple and diverse roles in B cell development and function. The CD79a/b heterodimer associates non-covalently with the immunoglobulin heavy chain through its transmembrane region, thus forming the BCR along with the immunoglobulin light chain and the pre-BCR when associated with the surrogate light chain in developing B cells. Association of the CD79a/b heterodimer with the immunoglobulin heavy chain is required for surface expression of the BCR and BCR induced calcium flux and protein tyrosine phosphorylation. Genetic deletion of the transmembrane exon of CD79A results in loss of CD79a protein and a complete block of B cell development at the pro to pre B cell transition. Similarly, humans with homozygous splice variants in CD79A predicted to result in loss of the transmembrane region and a truncated or absent protein display agammaglobulinemia and no peripheral B cells. The CD79a ITAM tyrosines (human CD79a Tyr188 and Tyr199, mouse CD79a Tyr182 and Tyr193) phosphorylated in response to BCR crosslinking, are critical for binding of Src-homology 2 domain-containing kinases such as spleen tyrosine kinase (Syk) and signal transduction by CD79a. In vivo, the CD79a ITAM tyrosines synergize with the CD79b ITAM tyrosines to mediate the transition from the pro to the pre B cell stage as suggested by the analysis of mice with targeted mutations of the CD79a and CD79b ITAM. Loss of only one of the two functional CD79a/b ITAMs resulted in impaired B cell development but B cell functions such as the T cell independent type II response and BCR mediated calcium flux in the available B cells were intact. However, the presence of both the CD79a and CD79b ITAM tyrosines were required for normal T cell dependent antibody responses. The CD79a cytoplasmic domain further contains a non-ITAM tyrosine distal of the CD79a ITAM (human CD79a Tyr210, mouse CD79a Tyr204) that can bind BLNK and Nck once phosphorylated, and is critical for BCR mediated B cell proliferation and B1 cell development. CD79a ITAM tyrosine phosphorylation and signaling is negatively regulated by serine and threonine residues in direct proximity of the ITAM (human CD79a Ser197, Ser203, Thr209; mouse CD79a Ser191, Ser197, Thr203), and play a role in limiting formation of bone marrow plasma cells secreting IgG2a and IgG2b.

Immunogen:	Recombinant protein within human CD79a aa 33-143 (Extracellular).
Positive control:	Human tonsil tissue, human appendix tissue, human lymph nodes tissue, Raji cell lysates.
Subcellular location:	Cell membrane.
Database links:	SwissProt: P11912 Human
Recommended Dilutions:	
WB	1:1,000
IHC-P	1:200-1:1,000
Storage Buffer:	PBS (pH7.4), 0.1% BSA, 40% Glycerol. Preservative: 0.05% Sodium Azide.
Storage Instruction:	Shipped at 4℃. Store at +4℃ short term (1-2 weeks). It is recommended to aliquot into single-use upon delivery. Store at -20℃ long term.
Purity:	Protein A affinity purified.

Images

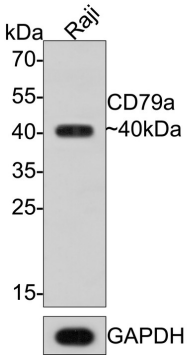

Fig1: Western blot analysis of CD79a on Raji cell lysates with Mouse anti-CD79a antibody (HA601118) at 1/1,000 dilution.

Lysates/proteins at 10 µg/Lane.

Predicted band size: 25 kDa
Observed band size: 40 kDa

Exposure time: 2 minutes;

12% SDS-PAGE gel.

Proteins were transferred to a PVDF membrane and blocked with 5% NFDM/TBST for 1 hour at room temperature. The primary antibody (HA601118) at 1/1,000 dilution was used in 5% NFDM/TBST at room temperature for 2 hours. Goat Anti-Mouse IgG - HRP Secondary Antibody (HA1006) at 1:150,000 dilution was used for 1 hour at room temperature.

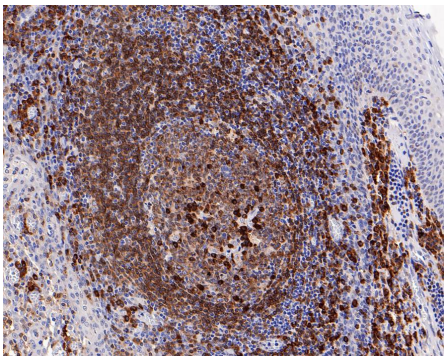

Fig2: Immunohistochemical analysis of paraffin-embedded human tonsil tissue with Mouse anti-CD79a antibody (HA601118) at 1/200 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (HA601118) at 1/200 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

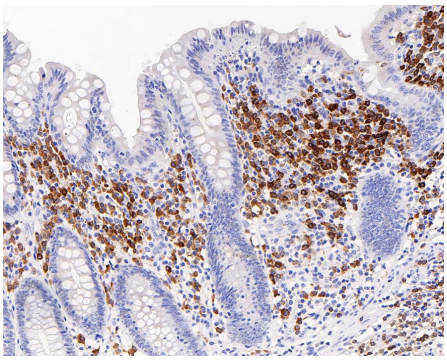

Fig3: Immunohistochemical analysis of paraffin-embedded human appendix tissue with Mouse anti-CD79a antibody (HA601118) at 1/1,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (HA601118) at 1/1,000 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

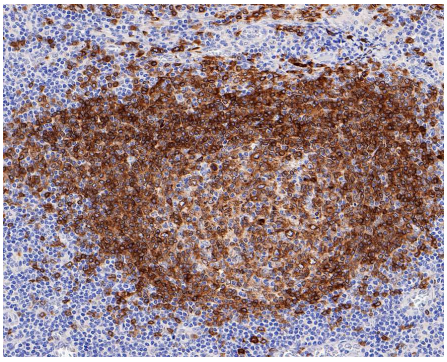

Fig4: Immunohistochemical analysis of paraffin-embedded human lymph nodes tissue with Mouse anti-CD79a antibody (HA601118) at 1/200 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (HA601118) at 1/200 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

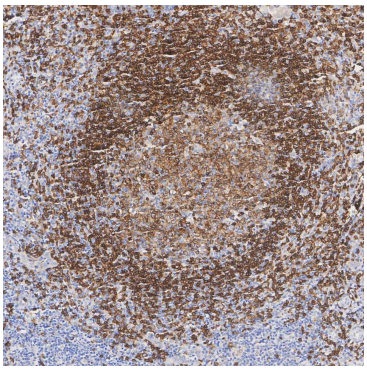

Fig5: Application: Immunohistochemistry (IHC-P)

Species: Human
Tissue: Tonsil
Sample: Paraffin-embedded section

Primary antibody dilution: 1/400
Antigen retrieval: ER2
Platform: Leica Biosystems BOND® RX

Note: All products are "FOR RESEARCH USE ONLY AND ARE NOT INTENDED FOR DIAGNOSTIC OR THERAPEUTIC USE".

Background References

1. Julamanee J et al. Composite CD79A/CD40 co-stimulatory endodomain enhances CD19CAR-T cell proliferation and survival. Mol Ther. 2021 Sep
2. Sakatani A et al. Clinicopathological significance of CD79a expression in classic Hodgkin lymphoma. J Clin Exp Hematop. 2020 Sep