abcam

ab227688

Anti-CD19 antibody [SP291] - C-terminal

Lab Essentials | Recombinant | RabMAb | Advanced Validation | KO Validated | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.6 Preservative: 0.1% Sodium azide Constituents: PBS, 1% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	SP291
Purification technique	Affinity purification Protein A/G
Purification notes	Purified from TCS by protein A/G.

Reactivity data

mIHC

Tested

Species	Human
Dilution info	1/100
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Expected

Species	Serinus canarius, Cat, Chicken, Horse, Llama, Pigeon
Dilution info	Use at an assay dependent concentration.
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/20 - 1/400
Notes	-

Expected

Species	Serinus canarius, Cat, Chicken, Horse, Llama, Pigeon
Dilution info	Use at an assay dependent concentration.
Notes	-

WB

Tested

Species	Human
Dilution info	1/400
Notes	-

Expected

Species	Serinus canarius, Cat, Chicken, Horse, Llama, Pigeon
Dilution info	Use at an assay dependent concentration.
Notes	-

IHC-P

Tested

Species	Human

Dilution info	1/100
Notes	Perform heat mediated antigen retrieval with EDTA buffer pH 8.0 before commencing with IHC staining protocol.

Species	Serinus canarius
Dilution info	1/100
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Cat
Dilution info	1/100
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Chicken
Dilution info	1/100
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Horse
Dilution info	1/100
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Llama
Dilution info	1/100
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Pigeon
Dilution info	1/100
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Target data

See full target information CD19

Function	Functions as a coreceptor for the B-cell antigen receptor complex (BCR) on B-lymphocytes (PubMed:29523808). Decreases the threshold for activation of downstream signaling pathways and for triggering B-cell responses to antigens (PubMed:1373518, PubMed:16672701, PubMed:2463100). Activates signaling pathways that lead to the activation of phosphatidylinositol 3-kinase and the mobilization of intracellular Ca(2+) stores (PubMed:12387743, PubMed:16672701, PubMed:9317126, PubMed:9382888). Is not required for early steps during B cell differentiation in the blood marrow (PubMed:9317126). Required for normal differentiation of B-1 cells (By similarity). Required for normal B cell differentiation and proliferation in response to antigen challenges (PubMed:1373518, PubMed:2463100). Required for normal levels of serum immunoglobulins, and for production of high-affinity antibodies in response to antigen challenge (PubMed:12387743, PubMed:16672701, PubMed:9317126).

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	CD19 is a transmembrane protein also known as B4 or B-lymphocyte antigen CD19 with an approximate molecular weight of 95 kDa. It is expressed on the surface of B cells throughout their development from pro-B cells to mature B cells. CD19 functions mechanically as a coreceptor enhancing the sensitivity of B cell receptor (BCR) signaling. This protein plays a significant role in promoting the activation and proliferation of B cells by lowering the threshold for antigen receptor engagement.
Biological function summary	CD19 acts as an essential player in B cell signaling. CD19 integrates signals from the BCR with other coreceptors acting as a signaling hub. It participates in forming a signaling complex that includes proteins like CD21 and CD81 which further amplifies BCR-mediated signaling. This complex plays a critical role in B cell activation differentiation and survival ensuring that immune responses are efficiently mounted against pathogens.

Pathways	The CD19 protein fits into key immune response pathways such as the BCR signaling pathway and the PI3K-Akt signaling pathway. CD19 collaborates with other proteins like CD21 CD81 and PI3K within these pathways. Its interaction in the PI3K-Akt pathway for instance supports critical processes including B cell activation and homeostasis contributing to the adaptive immune response.
Associated diseases and disorders	CD19 is connected to B cell malignancies and autoimmune diseases. B cell acute lymphoblastic leukemia (ALL) often shows aberrant CD19 expression making it a valuable target for therapeutic interventions like anti-CD19 monoclonal antibodies. Additionally overexpression or mutations of CD19 may contribute to autoimmune diseases by disrupting normal B cell regulation. CD19's connection with proteins like CD22 and CD20 in these pathological contexts highlights its relevance in developing targeted therapies.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

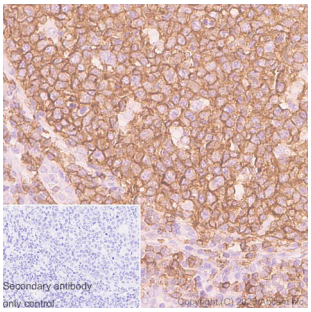
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

27 product images



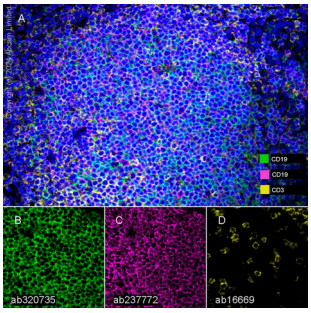
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD19 antibody [SP291] - C-terminal (ab227688)

Immunohistochemical analysis of paraffin-embedded human tonsil tissue labeling CD19 with ab227688 at 1/100 (0.15 ug/ml) dilution, followed by a ready to use rabbit specific IHC polymer detection kit HRP/DAB (ab209101).
Positive staining in human tonsil.
The section was incubated with ab227688 for 10 mins at room temperature.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument.

Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

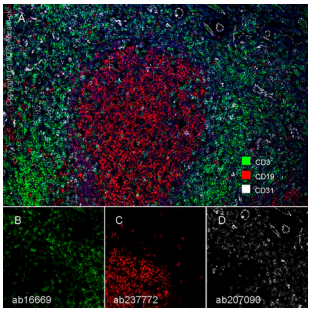
Heat mediated antigen retrieval was performed with Citrate buffer (pH 6.0, Epitope Retrieval Solution 1) for 20 mins.



Multiplex immunohistochemistry - Anti-CD19 antibody [SP291] - C-terminal (ab227688)

This data was developed using ab237772, the same antibody clone in a different buffer formulation.

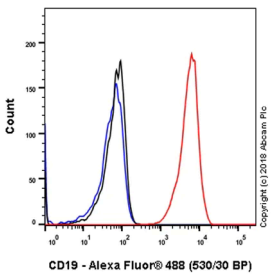
Panel A: merged staining of anti-CD19 (green; Opal™520), anti-CD19 (magenta; Opal™570) and anti-CD3 (yellow; Opal™690) on human tonsil. Panel B: anti-CD19 staining the B lymphocytes in human tonsil. Panel C: anti-CD19 staining the B lymphocytes in human tonsil. Panel D: anti-CD3 staining the T lymphocytes in human tonsil. Nuclear DNA was labeled with DAPI (shown in blue). The section was incubated in three rounds of staining: in the order of ab320735 at 1/2000 dilution, ab237772 at 1/5000 dilution and ab16669 at 1/150 dilution for 30 mins at room temperature. Each round was followed by a separate fluorescent tyramide signal amplification system. The secondary used was Opal Polymer HRP Ms + Rb. Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins. The immunostaining was performed on a Leica Biosystems BOND® RX instrument with an Opal™ 4-color kit. Image acquisition was performed with Leica SP8 confocal microscope.



Multiplex immunohistochemistry - Anti-CD19 antibody [SP291] - C-terminal (ab227688)

CD19 Multiplex immunohistochemistry staining using rabbit Anti-CD19 antibody

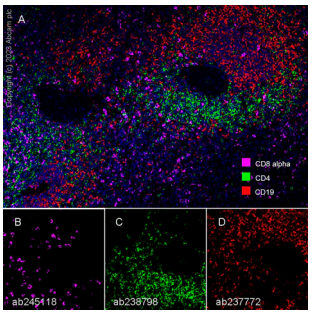
Panel A: merged staining of anti-CD31 (gray; Opal™690), anti-CD3 epsilon (green; Opal™520) and anti-CD19 (red; Opal™570) on Formalin/PFA-fixed paraffin-embedded sections of human tonsil. Secondary antibody was Opal Polymer HRP Ms + Rb, nuclear counterstain was DAPI. Panel B: anti-CD3 epsilon stained on T cells with ab16669 at 1/500 dilution Panel C: anti-CD19 stained on B cells with ab237772 at 1/5000 dilution Panel D: anti-CD31 stained on endothelial cells and immune cell subsets with ab207090 at 1/500 dilution The section was incubated in three rounds of staining: in the order of ab207090 and ab16669 for 30 mins, then ab237772 for 10 mins at room temperature. Each round was followed by a separate fluorescent tyramide signal amplification system. The immunostaining was performed on a Leica Biosystems BOND® RX instrument with an Opal™ 4-color kit. Image acquisition was performed with Leica SP8 confocal microscope. Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins



Flow Cytometry (Intracellular) - Anti-CD19 antibody [SP291] - C-terminal (ab227688)

CD19 Flow Cytometry (Intracellular) staining using rabbit Anti-CD19 antibody

Flow cytometry analysis of Raji (human Burkitt's lymphoma) labeling CD19 with purified ab227688 at 1/20 dilution (7.5 µg/ml) (red). Cells were fixed with 4% paraformaldehyde and permeabilised with 90% methanol. Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) at 1/2000 dilution was used as a secondary antibody. Isotype control - Rabbit monoclonal IgG (ab172730) (Black). Unlableled control - Unlabelled cells (blue).



Multiplex immunohistochemistry - Anti-CD19 antibody [SP291] - C-terminal (ab227688)

CD19 Multiplex immunohistochemistry staining of Human spleen using rabbit Anti-CD19 antibody

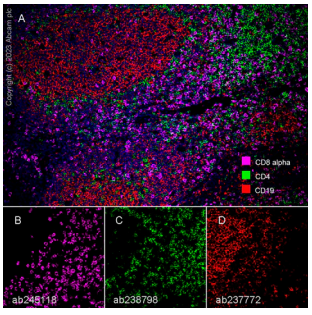
This data was developed using ab237772, the same antibody clone in a different buffer formulation.
Multiplex immunohistochemistry analysis of formalin/PFA-fixed paraffin-embedded Human spleen tissue labeling CD8 alpha with ab245118 at 1/500 dilution, CD4 with ab238798 at 1/500, and CD19 with ab237772 at 1/5000 dilution.

Panel A: merged staining of anti-CD8 alpha (magenta; Opal™690), anti-CD4 (green; Opal™520) and anti-CD19 (red; Opal™570) on human spleen.
Panel B: anti-CD8 alpha stained on cytotoxic T cells.
Panel C: anti-CD4 stained on T helper cells.
Panel D: anti-CD19 stained on B cells.

Sections were treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins before antibody incubation. The section was incubated in three rounds of staining: in the order of ab245118 for 30 mins, then ab238798 and ab237772 for 10 mins at room temperature. Each round was followed by a separate fluorescent tyramide signal amplification system.

DAPI was used as a nuclear counterstain.

The immunostaining was performed on a Leica Biosystems BOND® RX instrument with an Opal™ 4-color kit. Image acquisition was performed with Leica SP8 confocal microscope.



Multiplex immunohistochemistry - Anti-CD19 antibody [SP291] - C-terminal (ab227688)

CD19 Multiplex immunohistochemistry staining of Human tonsil using rabbit Anti-CD19 antibody

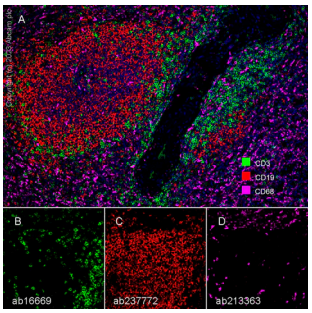
This data was developed using ab237772, the same antibody clone in a different buffer formulation.
Multiplex immunohistochemistry analysis of formalin/PFA-fixed paraffin-embedded Human tonsil tissue labeling CD8 alpha with ab245118 at 1/500 dilution, CD4 with ab238798 at 1/500, and CD19 with ab237772 at 1/5000 dilution.

Panel A: merged staining of anti-CD8 alpha (magenta; Opal™690), anti-CD4 (green; Opal™520) and anti-CD19 (red; Opal™570) on human tonsil.
Panel B: anti-CD8 alpha stained on cytotoxic T cells.
Panel C: anti-CD4 stained on T helper cells.
Panel D: anti-CD19 stained on B cells.

Sections were treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins before antibody incubation. The section was incubated in three rounds of staining: in the order of ab245118 for 30 mins, then ab238798 and ab237772 for 10 mins at room temperature. Each round was followed by a separate fluorescent tyramide signal amplification system.

DAPI was used as a nuclear counterstain.

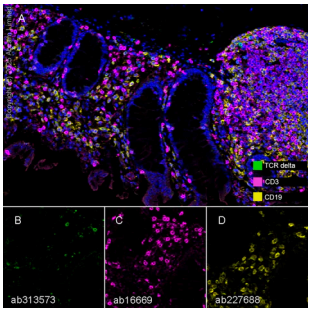
The immunostaining was performed on a Leica Biosystems BOND® RX instrument with an Opal™ 4-color kit. Image acquisition was performed with Leica SP8 confocal microscope.



Multiplex immunohistochemistry - Anti-CD19 antibody [SP291] - C-terminal (ab227688)

CD19 Multiplex immunohistochemistry staining using rabbit Anti-CD19 antibody

Panel A: merged staining of anti-CD68 (magenta; Opal™690), anti-CD3 epsilon (green; Opal™520) and anti-CD19 (red; Opal™570) on Formalin/PFA-fixed paraffin-embedded sections of human spleen. Secondary antibody was Opal Polymer HRP Ms + Rb, and couterstaining was with DAPI. Panel B: anti-CD3 epsilon stained on T cells with ab16669 at 1/500 dilution Panel C: anti-CD19 stained on B cells with ab237772 at 1/5000 dilution Panel D: anti-CD68 stained on macrophages with ab213363 1/500 dilution The section was incubated in three rounds of staining: in the order of ab213363 and ab16669 for 30 mins, then ab237772 for 10 mins at room temperature. Each round was followed by a separate fluorescent tyramide signal amplification system. Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins. The immunostaining was performed on a Leica Biosystems BOND® RX instrument with an Opal™ 4-color kit. Image acquisition was performed with Leica SP8 confocal microscope.



Multiplex immunohistochemistry - Anti-CD19 antibody [SP291] - C-terminal (ab227688)

CD19 Multiplex immunohistochemistry staining of Human colon using rabbit Anti-CD19 antibody

Multiplex immunohistochemistry analysis of formalin/PFA-fixed paraffin-embedded human spleen tissue staining TCR delta with ab313573 at a 1/500 dilution, ab16669 anti-CD3 used at 1/100 dilution and ab227688 anti-CD19 used at a 1/100 dilution.

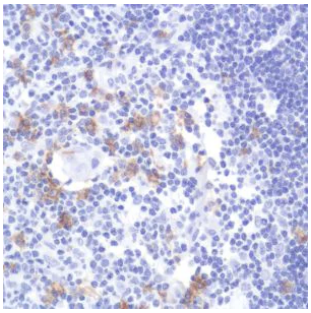
Panel A: merged staining of anti-TCR delta (green; Opal™520), anti-CD3 (magenta; Opal™570) and anti-CD19 (yellow; Opal™690) on human colon.
Panel B: anti-TCR delta staining immune cells in human colon.
Panel C: anti-CD3 staining T lymphocytes in human colon.
Panel D: anti-CD19 staining B lymphocytes in human colon.
Nuclear DNA was labeled with DAPI (shown in blue).

The section was incubated in three rounds of staining: in the order of ab313573, ab16669 and ab227688 for 30 mins at room temperature. Each round was followed by a separate fluorescent tyramide signal amplification system.

The immunostaining was performed on a Leica Biosystems BOND® RX instrument with an Opal™ 4-color kit. Image acquisition was performed with Leica SP8 confocal microscope.

Nuclear counter stain with DAPI.

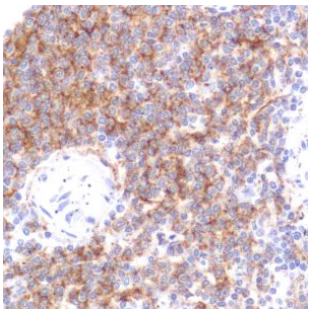
Heat mediated antigen retrieval was performed with Citrate buffer (pH 6.0, Epitope Retrieval Solution 1) for 20 mins..



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD19 antibody [SP291] - C-terminal (ab227688)

CD19 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-CD19 antibody

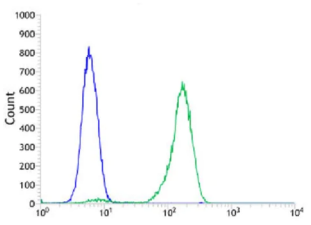
Formalin-fixed, paraffin-embedded human thymus tissue stained for CD19 using ab227688 at 1/100 dilution in immunohistochemical analysis.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD19 antibody [SP291] - C-terminal (ab227688)

CD19 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-CD19 antibody

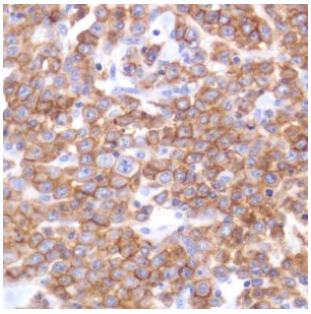
Formalin-fixed, paraffin-embedded human spleen tissue stained for CD19 using ab227688 at 1/100 dilution in immunohistochemical analysis.



Flow Cytometry (Intracellular) - Anti-CD19 antibody [SP291] - C-terminal (ab227688)

CD19 Flow Cytometry (Intracellular) staining using rabbit Anti-CD19 antibody

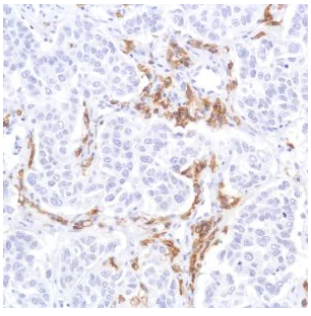
Flow Cytometry analysis of Ramos (human Burkitt's lymphoma cell line) cells, labeling CD19 with ab227688 at 1/400 dilution (green) compared to a Rabbit IgG negative control (blue).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD19 antibody [SP291] - C-terminal (ab227688)

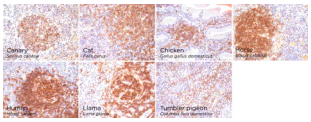
CD19 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-CD19 antibody

Formalin-fixed, paraffin-embedded human B-Cell lymphoma tissue stained for CD19 using ab227688 at 1/100 dilution in immunohistochemical analysis.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD19 antibody [SP291] - C-terminal (ab227688)

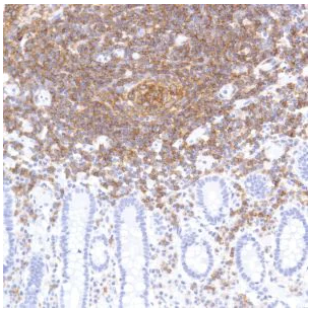
Formalin-fixed, paraffin-embedded human breast ductal carcinoma tissue stained for CD19 using ab227688 at 1/100 dilution in immunohistochemical analysis.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD19 antibody [SP291] - C-terminal (ab227688)

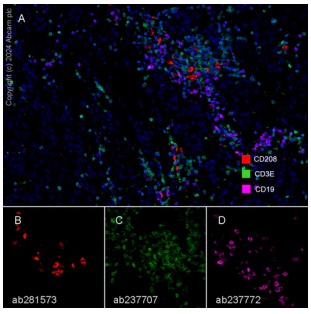
CD19 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-CD19 antibody

The BOND™ Polymer Refine Detection System on the BOND RX Automated Stainer (DS9800, Leica Biosystems, Wetzlar, Germany) was used for immunohistochemical labelling of formalin-fixed, paraffin-embedded (FFPE) tissues. The protocol includes a peroxide block, post-primary reagent, polymer detection, DAB chromogen, and haematoxylin counterstain, all automated to minimize variability. Antigen retrieval was performed by heat-induced epitope retrieval (HIER) for 20 minutes in Tris-EDTA buffer (BOND Epitope Retrieval Solution 2, AR9640, Leica Biosystems, Wetzlar, Germany). For mouse and rabbit antibodies, the sequence comprised peroxide block (10 min), primary antibody incubation (30 min), post-primary (10 min), polymer (10 min), DAB (10 min), and haematoxylin (8 min). For rat antibodies, an anti-rat step (1:300 dilution, Vector Laboratories, California, USA; 20 min) was included prior to polymer application (15 min).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD19 antibody [SP291] - C-terminal (ab227688)

Formalin-fixed, paraffin-embedded human colon tissue stained for CD19 using ab227688 at 1/100 dilution in immunohistochemical analysis.



Multiplex immunohistochemistry - Anti-CD19 antibody [SP291] - C-terminal (ab227688)

This data was developed using ab237772, the same antibody clone in a different buffer formulation.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Human liver cancer labelling CD208 with ab281573 at 1/1200 (B), CD3E with ab237707 at 1/1200 dilution (C) and CD19 with ab237772 at 1/1200 dilution(D). Opal Polymer HRP Ms + Rb was used as a secondary antibody, and DAPI was used for a nuclear counter stain. Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins.

Panel A: merged staining of anti-CD208 (red; Opal™570), anti-CD3E (green; Opal™520) and anti-CD19 (magenta; Opal™690) on human liver cancer.

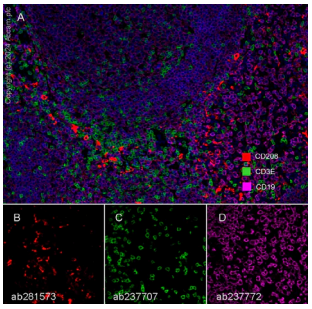
Panel B: anti-CD208 staining dendritic cells in human liver cancer.

Panel C: anti-CD3E staining T lymphocytes in human liver cancer.

Panel D: anti-CD19 staining B lymphocytes of human liver cancer.

The section was incubated in three rounds of staining: in the order ab281573, ab237707, and ab237772 for 30 mins at room temperature. Each round was followed by a separate fluorescent tyramide signal amplification system.

The immunostaining was performed on a Leica Biosystems BOND® RX instrument with an Opal™ 4-color kit. Image acquisition was performed with Leica SP8 confocal microscope.



Multiplex immunohistochemistry - Anti-CD19 antibody [SP291] - C-terminal (ab227688)

CD19 Multiplex immunohistochemistry staining of Human tonsil tissue using rabbit Anti-CD19 antibody

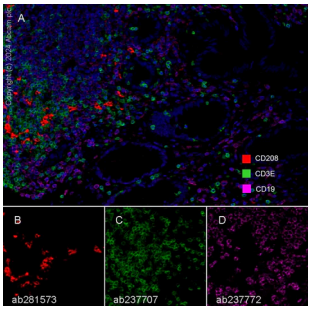
This data was developed using ab237772, the same antibody clone in a different buffer formulation.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Human tonsil labelling CD208 with ab281573 at 1/1200 (B), CD3E with ab237707 at 1/1200 dilution (C) and CD19 with ab237772 at 1/1200 dilution(D). Opal Polymer HRP Ms + Rb was used as a secondary antibody, and DAPI was used for a nuclear counter stain. Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins.

Panel A: merged staining of anti-CD208 (red; Opal™570), anti-CD3E (green; Opal™520) and anti-CD19 (magenta; Opal™690) on human tonsil.
Panel B: anti-CD208 staining dendritic cells in human tonsil.
Panel C: anti-CD3E staining T lymphocytes in human tonsil.
Panel D: anti-CD19 staining B lymphocytes of human tonsil.

The section was incubated in three rounds of staining: in the order ab281573, ab237707, and ab237772 for 30 mins at room temperature. Each round was followed by a separate fluorescent tyramide signal amplification system.

The immunostaining was performed on a Leica Biosystems BOND® RX instrument with an Opal™ 4-color kit. Image acquisition was performed with Leica SP8 confocal microscope.



Multiplex immunohistochemistry - Anti-CD19 antibody [SP291] - C-terminal (ab227688)

This data was developed using ab237772, the same antibody clone in a different buffer formulation.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Human colon labelling CD208 with ab281573 at 1/1200 (B), CD3E with ab237707 at 1/1200 dilution (C) and CD19 with ab237772 at 1/1200 dilution(D). Opal Polymer HRP Ms + Rb was used as a secondary antibody, and DAPI was used for a nuclear counter stain. Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins.

Panel A: merged staining of anti-CD208 (red; Opal™570), anti-CD3E (green; Opal™520) and anti-CD19 (magenta; Opal™690) on human colon.

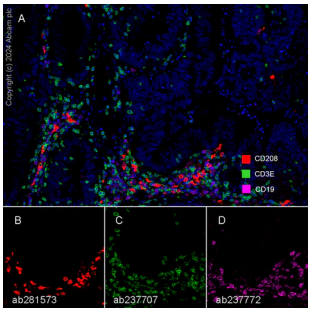
Panel B: anti-CD208 staining dendritic cells in human colon.

Panel C: anti-CD3E staining T lymphocytes in human colon.

Panel D: anti-CD19 staining B lymphocytes of human colon.

The section was incubated in three rounds of staining: in the order ab281573, ab237707, and ab237772 for 30 mins at room temperature. Each round was followed by a separate fluorescent tyramide signal amplification system.

The immunostaining was performed on a Leica Biosystems BOND® RX instrument with an Opal™ 4-color kit. Image acquisition was performed with Leica SP8 confocal microscope.



Multiplex immunohistochemistry - Anti-CD19 antibody [SP291] - C-terminal (ab227688)

This data was developed using ab237772, the same antibody clone in a different buffer formulation.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Human colon cancer labelling CD208 with ab281573 at 1/1200 (B), CD3E with ab237707 at 1/1200 dilution (C) and CD19 with ab237772 at 1/1200 dilution(D). Opal Polymer HRP Ms + Rb was used as a secondary antibody, and DAPI was used for a nuclear counter stain. Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins.

Panel A: merged staining of anti-CD208 (red; Opal™570), anti-CD3E (green; Opal™520) and anti-CD19 (magenta; Opal™690) on human colon cancer.

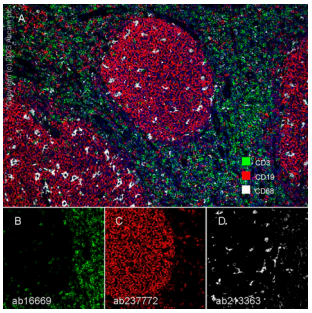
Panel B: anti-CD208 staining dendritic cells in human colon cancer.

Panel C: anti-CD3E staining T lymphocytes in human colon cancer.

Panel D: anti-CD19 staining B lymphocytes of human colon cancer.

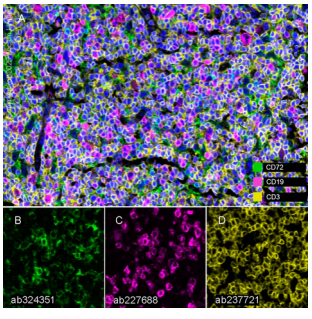
The section was incubated in three rounds of staining: in the order ab281573, ab237707, and ab237772 for 30 mins at room temperature. Each round was followed by a separate fluorescent tyramide signal amplification system.

The immunostaining was performed on a Leica Biosystems BOND® RX instrument with an Opal™ 4-color kit. Image acquisition was performed with Leica SP8 confocal microscope.



Multiplex immunohistochemistry - Anti-CD19 antibody [SP291] - C-terminal (ab227688)

Panel A: merged staining of anti-CD68 (gray; Opal™690), anti-CD3 epsilon (green; Opal™520) and anti-CD19 (red; Opal™570) on Formalin/PFA-fixed paraffin-embedded sections of human tonsil. Secondary antibody was Opal Polymer HRP Ms + Rb, and counterstaining was with DAPI. Panel B: anti-CD3 epsilon stained on T cells with ab16669 at 1/500 dilution Panel C: anti-CD19 stained on B cells with ab237772 at 1/5000 dilution Panel D: anti-CD68 stained on macrophages with ab213363 1/500 dilution The section was incubated in three rounds of staining: in the order of ab213363 and ab16669 for 30 mins, then ab237772 for 10 mins at room temperature. Each round was followed by a separate fluorescent tyramide signal amplification system. Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins. The immunostaining was performed on a Leica Biosystems BOND® RX instrument with an Opal™ 4-color kit. Image acquisition was performed with Leica SP8 confocal microscope.



Multiplex immunohistochemistry - Anti-CD19 antibody [SP291] - C-terminal (ab227688)

CD19 Multiplex immunohistochemistry staining of Human Hodgkin's lymphoma using rabbit Anti-CD19 antibody

Multiplex immunohistochemistry analysis of formalin/PFA-fixed paraffin-embedded human hodgkin's lymphoma tissue staining CD72 with ab324351 at a 1:500 (1.018 ug/ml) dilution, ab227688 anti-CD19 used at 1:100 (0.15 ug/ml) dilution and ab237721 anti-CD3 used at a 1:2000 (0.26 ug/ml) dilution.

Panel A: merged staining of anti-CD72 (green; Opal™520), anti-CD19 (magenta; Opal™570) and anti-CD3 (yellow; Opal™690) on human Hodgkin's lymphoma.

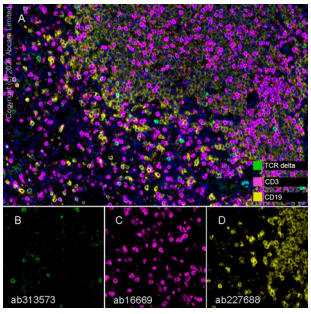
Panel B: anti-CD72 staining immune cells in human Hodgkin's lymphoma.
Panel C: ant-CD19 staining B lymphocytes in human Hodgkin's lymphoma.
Panel D: ant-CD3 staining T lymphocytes in human Hodgkin's lymphoma.
Nuclear DNA was labeled with DAPI (shown in blue).

The section was incubated in three rounds of staining: in the order of ab324351, ab227688 and ab237721 for 30 mins at room temperature. Each round was followed by a separate fluorescent tyramide signal amplification system.

The immunostaining was performed on a Leica Biosystems BOND® RX instrument with an Opal™ 4-color kit. Image acquisition was performed with Leica SP8 confocal microscope.

Nuclear counter stain with DAPI.

Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins.



Multiplex immunohistochemistry - Anti-CD19 antibody [SP291] - C-terminal (ab227688)

CD19 Multiplex immunohistochemistry staining of Human spleen using rabbit Anti-CD19 antibody

Multiplex immunohistochemistry analysis of formalin/PFA-fixed paraffin-embedded human spleen tissue staining TCR delta with ab313573 at a 1/500 dilution, ab16669 anti-CD3 used at 1/100 dilution and ab227688 anti-CD19 used at a 1/100 dilution.

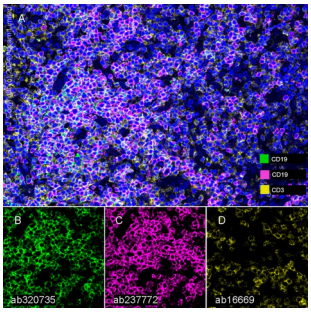
Panel A: merged staining of anti-TCR delta (green; Opal™520), anti-CD3 (magenta; Opal™570) and anti-CD19 (yellow; Opal™690) on human spleen.
Panel B: anti-TCR delta staining immune cells in human spleen.
Panel C: anti-CD3 staining T lymphocytes in human spleen.
Panel D: anti-CD19 staining B lymphocytes in human spleen.
Nuclear DNA was labeled with DAPI (shown in blue).

The section was incubated in three rounds of staining: in the order of ab313573, ab16669 and ab227688 for 30 mins at room temperature. Each round was followed by a separate fluorescent tyramide signal amplification system.

The immunostaining was performed on a Leica Biosystems BOND® RX instrument with an Opal™ 4-color kit. Image acquisition was performed with Leica SP8 confocal microscope.

Nuclear counter stain with DAPI.

Heat mediated antigen retrieval was performed with Citrate buffer (pH 6.0, Epitope Retrieval Solution 1) for 20 mins.

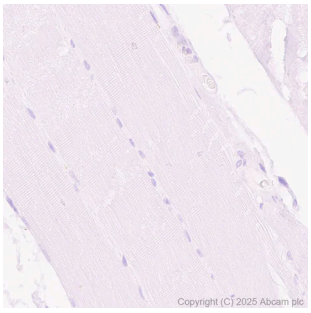


Multiplex immunohistochemistry - Anti-CD19 antibody [SP291] - C-terminal (ab227688)

This data was developed using ab237772, the same antibody clone in a different buffer formulation.

Panel A: merged staining of anti-CD19 (green; Opal™520), anti-CD19 (magenta; Opal™570) and anti-CD3 (yellow; Opal™690) on human Hodgkin's lymphoma. Panel B: anti-CD19 staining the B lymphocytes in human Hodgkin's lymphoma. Panel C: anti-CD19 staining the B lymphocytes in human Hodgkin's lymphoma. Panel D: anti-CD3 staining the T lymphocytes in human Hodgkin's lymphoma. Nuclear DNA was labeled with DAPI (shown in blue). The section was incubated in three rounds of staining: in the order of ab320735 at 1/2000 dilution, ab237772 at 1/5000 dilution

and ab16669 at 1/150 dilution for 30 mins at room temperature. Each round was followed by a separate fluorescent tyramide signal amplification system. The secondary used was Opal Polymer HRP Ms + Rb. Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins. The immunostaining was performed on a Leica Biosystems BOND® RX instrument with an Opal™ 4-color kit. Image acquisition was performed with Leica SP8 confocal microscope.



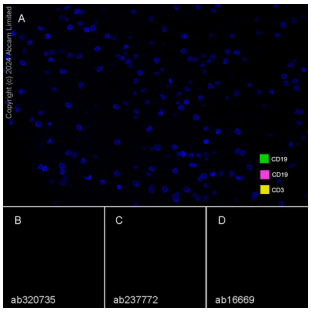
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CD19 antibody [SP291] - C-terminal (ab227688)

Immunohistochemical analysis of paraffin-embedded human skeletal muscle labeling CD19 with ab227688 at 1/100 (0.15 ug/ml) dilution, followed by a ready to use rabbit specific IHC polymer detection kit HRP/DAB (ab209101).
Negative control: no staining in human skeletal muscle.
The section was incubated with ab227688 for 10 mins at room temperature.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument

Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

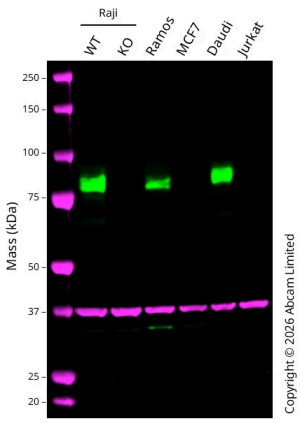
Heat mediated antigen retrieval was performed with Citrate buffer (pH 6.0, Epitope Retrieval Solution 1) for 20 mins



Multiplex immunohistochemistry - Anti-CD19 antibody [SP291] - C-terminal (ab227688)

This data was developed using ab237772, the same antibody clone in a different buffer formulation.

Panel A: merged staining of anti-CD19 (green; Opal™520), anti-CD19 (green; Opal™570) and anti-CD3 (yellow; Opal™690) on human cerebrum. Panel B: anti-CD19 showed no staining in human cerebrum. Panel C: anti-CD19 showed no staining in human cerebrum. Panel D: anti-CD3 showed no staining in human cerebrum. Nuclear DNA was labeled with DAPI (shown in blue). The section was incubated in three rounds of staining: in the order of ab320735 at 1/2000 dilution, ab237772 at 1/5000 dilution and ab16669 at 1/150 dilution for 30 mins at room temperature. Each round was followed by a separate fluorescent tyramide signal amplification system. The secondary used was Opal Polymer HRP Ms + Rb. Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins. The immunostaining was performed on a Leica Biosystems BOND® RX instrument with an Opal™ 4-color kit. Image acquisition was performed with Leica SP8 confocal microscope.



Western blot - Anti-CD19 antibody [SP291] - C-terminal (ab227688)

CD19 Western blot staining using rabbit Anti-CD19 antibody

Western blot: Anti-CD19 antibody [SP291] - C-terminal ab227688 staining at 1/400 dilution, shown in green; Mouse anti GAPDH ab8245 loading control staining at 1/20000 dilution, shown in magenta. A band was observed at 80-90 kDa in Wild-type Raji cell lysates with no signal observed at this size in CD19 knockout Raji cell line. To generate this image, samples were run on an SDS-PAGE gel then transferred onto a nitrocellulose membrane. Membranes were blocked in 5% Milk in TBS-0.1 % Tween® 20 (TBS-T) before incubation with primary antibodies overnight at 4 °C. Blots were washed four times in TBS-T, incubated with secondary antibodies for 1 h at room temperature, washed again four times then imaged. Secondary antibodies used were Goat anti-Rabbit 800CW and Goat anti-Mouse 680RD at 1/20,000 dilution.
All lanes:
Western blot - Anti-CD19 antibody [SP291] - C-terminal (ab227688) at 1/400 dilution

Lane 1:
Wild-type Raji at 20 µg

Lane 2:
Western blot - Human CD19 knockout Raji cell line (ab274913) at 20 µg

Lane 3:
Ramos at 20 µg

Lane 4:
MCF7 at 20 µg

Lane 5:
Daudi at 20 µg

Lane 6:
Jurkat at 20 µg

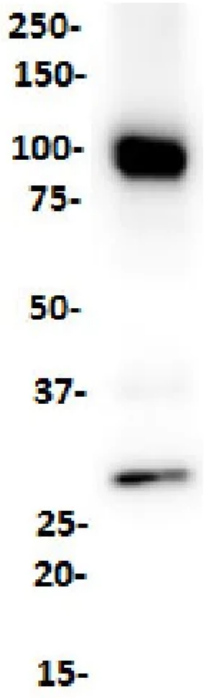
Secondary

All lanes:
Goat anti-Rabbit 800CW & Goat anti-Mouse 680RD at 1/20000 dilution

Performed under reducing conditions.

Predicted band size: 80-90 kDa

Observed band size: 80-90 kDa



Western blot - Anti-CD19 antibody [SP291] - C-terminal (ab227688)

All lanes:
Western blot - Anti-CD19 antibody [SP291] - C-terminal (ab227688) at 1/400 dilution

All lanes:
Ramos (human Burkitt's lymphoma cell line) cell lysate

Predicted band size: 61 kDa

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.