abcam

ab317843

Anti-c-Kit/CD117 antibody [RM1190]

Recombinant | RabMAb | KO Validated | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Multiclonal
Immunogens	The exact immunogen used to generate this antibody is proprietary information.
Clone number	RM1190
Purification technique	Affinity purification Protein A
Specificity	Unsuitable for human ICC and rat WB.
Concentration	0.514 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Human
Dilution info	1/1000
Notes	-

Species	Mouse
Dilution info	1/1000
Notes	-

Not recommended

Species	Rat
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Mouse
Dilution info	1/500
Notes	-

Expected

Species	Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Not recommended

Species	Human
Dilution info	-
Notes	-

Flow Cyt

Tested

Species	Mouse
Dilution info	1/500

Notes	-

Expected

Species	Human, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

IHC-P

Tested

Species	Human
Dilution info	1/1000 - 1/2000
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Mouse
Dilution info	1/2000
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Species	Rat
Dilution info	1/2000
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

IP

Tested

Species	Mouse
Dilution info	1/30
Notes	-

Expected

Species	Rat

Dilution info	Use at an assay dependent concentration.
Notes	-

Not recommended

Species	Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information c-Kit/CD117

Function

Tyrosine-protein kinase that acts as a cell-surface receptor for the cytokine KITLG/SCF and plays an essential role in the regulation of cell survival and proliferation, hematopoiesis, stem cell maintenance, gametogenesis, mast cell development, migration and function, and in melanogenesis. In response to KITLG/SCF binding, KIT can activate several signaling pathways. Phosphorylates PIK3R1, PLCG1, SH2B2/APS and CBL. Activates the AKT1 signaling pathway by phosphorylation of PIK3R1, the regulatory subunit of phosphatidylinositol 3-kinase. Activated KIT also transmits signals via GRB2 and activation of RAS, RAF1 and the MAP kinases MAPK1/ERK2 and/or MAPK3/ERK1. Promotes activation of STAT family members STAT1, STAT3, STAT5A and STAT5B. Activation of PLCG1 leads to the production of the cellular signaling molecules diacylglycerol and inositol 1,4,5-trisphosphate. KIT signaling is modulated by protein phosphatases, and by rapid internalization and degradation of the receptor. Activated KIT promotes phosphorylation of the protein phosphatases PTPN6/SHP-1 and PTPRU, and of the transcription factors STAT1, STAT3, STAT5A and STAT5B. Promotes phosphorylation of PIK3R1, CBL, CRK (isoform Crk-II), LYN, MAPK1/ERK2 and/or MAPK3/ERK1, PLCG1, SRC and SHC1.

Storage

Shipped at conditions	Blue Ice

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

Notes

What are recombinant multiclonals?
Recombinant multiclonals are a mixture of recombinant antibodies co-expressed from a library of heavy and light chains. They offer several advantages including:

- The sensitivity of polyclonal antibodies by recognising multiple epitopes
- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

View our range of recombinant multiclonal antibodies.

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

Supplementary info

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

Activity summary	The c-Kit protein also known as CD117 is a type of receptor tyrosine kinase with a molecular weight of approximately 145 kDa. It is encoded by the KIT gene and commonly expressed on the surface of hematopoietic stem cells mast cells melanocytes and germ cells. C-Kit plays a role in the signal transduction pathways that control cell proliferation and survival. Researchers often identify c-Kit using markers like biotin c-Kit PerCP Cy5.5 or antibodies such as anti-c-Kit for experimental purposes.
Biological function summary	C-Kit influences the function and survival of certain cell types. When it binds to its ligand stem cell factor (SCF) it activates receptor dimerization and phosphorylation triggering downstream signaling. C-Kit does not act alone; it often functions in a complex with other proteins to affect cellular outcomes. Its expression is vital for the maintenance of bone marrow hematopoietic cells and contributes to melanocyte and germ cell development.

Pathways	C-Kit interacts with the PI3K/AKT and RAS/ERK pathways through its kinase activity. These pathways play important roles in cell division differentiation and survival. The c-Abl and ACK2 proteins are closely related to c-Kit function within these signaling networks contributing to regulating cellular responses to external stimuli.
Associated diseases and disorders	C-Kit mutations are frequently associated with gastrointestinal stromal tumors (GIST) and acute myeloid leukemia (AML). These conditions often involve alterations in c-Kit activity leading to uncontrolled cell growth. While studying GIST researchers have noticed interactions between c-Kit and other proteins like CBL which is involved in the modulation of c-Kit signaling. Understanding these interactions helps in designing targeted therapies for conditions involving c-Kit dysregulation.

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

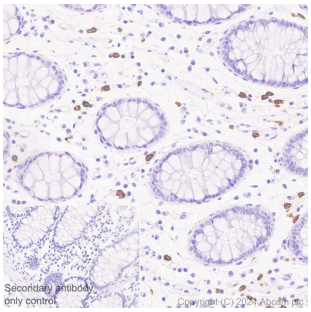
We do not recommend this combination. It is not covered by our product promise.

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.

12 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-c-Kit/CD117 antibody [RM1190] (ab317843)

C-Kit/CD117 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Human colon using rabbit Anti-c-Kit/CD117 antibody

Immunohistochemical analysis of paraffin-embedded Human colon tissue labeling c-Kit with ab317843 at 1/2000 (0.248 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

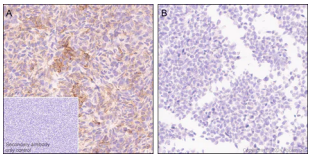
Positive staining on mast cells in human colon. The section was incubated with ab317843 for 30 mins at room temperature.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument

Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

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

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Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-c-Kit/CD117 antibody [RM1190] (ab317843)

C-Kit/CD117 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-c-Kit/CD117 antibody

Immunohistochemical analysis of paraffin-embedded A Wild-type HAP1 cell pellet B Human KIT knockout HAP1(human chronic myelogenous leukemia near-haploid cell) cell pellet tissue labeling c-Kit with ab317843 at 1/1000 (0.496 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

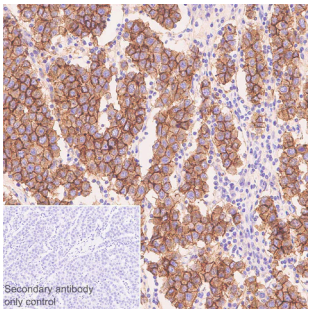
Positive staining on A: Wild-type HAP1 cell pellet, no staining on B: human KIT knockout HAP1 cell pellet. The section was incubated with ab317843 for 30 mins at room temperature.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument

Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

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

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Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-c-Kit/CD117 antibody [RM1190] (ab317843)

C-Kit/CD117 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Human seminoma using rabbit Anti-c-Kit/CD117 antibody

Immunohistochemical analysis of paraffin-embedded Human seminoma tissue labeling c-Kit with ab317843 at 1/2000 (0.248 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

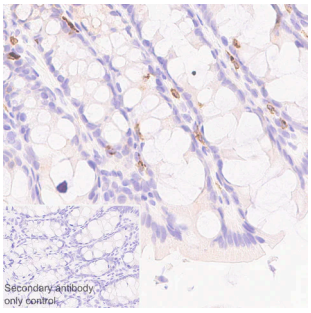
Positive staining on human seminoma. The section was incubated with ab317843 for 30 mins at room temperature.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument

Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

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

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Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-c-Kit/CD117 antibody [RM1190] (ab317843)

C-Kit/CD117 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Rat colon using rabbit Anti-c-Kit/CD117 antibody

Immunohistochemical analysis of paraffin-embedded Rat colon tissue labeling c-Kit with ab317843 at 1/2000 (0.248 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

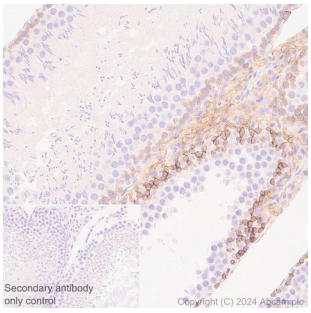
Positive staining on scattered mast cells in rat colon. The section was incubated with ab317843 for 30 mins at room temperature.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument

Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

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

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Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-c-Kit/CD117 antibody [RM1190] (ab317843)

C-Kit/CD117 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Rat testis using rabbit Anti-c-Kit/CD117 antibody

Immunohistochemical analysis of paraffin-embedded Rat testis tissue labeling c-Kit with ab317843 at 1/2000 (0.248 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

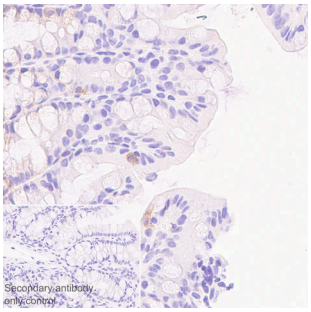
Positive staining on rat testis. The section was incubated with ab317843 for 30 mins at room temperature.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument

Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

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

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Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-c-Kit/CD117 antibody [RM1190] (ab317843)

C-Kit/CD117 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Mouse colon using rabbit Anti-c-Kit/CD117 antibody

Immunohistochemical analysis of paraffin-embedded Mouse colon tissue labeling c-Kit with ab317843 at 1/2000 (0.248 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

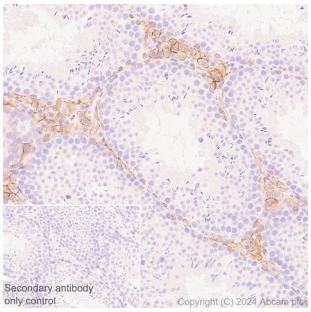
Positive staining on scattered mast cells in mouse colon. The section was incubated with ab317843 for 30 mins at room temperature.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument

Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

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

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Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-c-Kit/CD117 antibody [RM1190] (ab317843)

C-Kit/CD117 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Mouse testis using rabbit Anti-c-Kit/CD117 antibody

Immunohistochemical analysis of paraffin-embedded Mouse testis tissue labeling c-Kit with ab317843 at 1/2000 (0.248 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

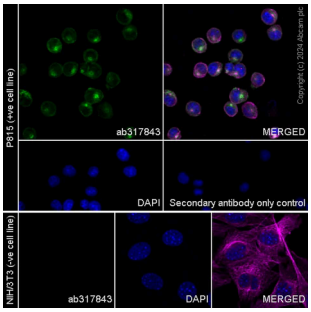
Positive staining on mouse testis. The section was incubated with ab317843 for 30 mins at room temperature.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument

Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

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

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Immunocytochemistry/ Immunofluorescence - Anti-c-Kit/CD117 antibody [RM1190] (ab317843)

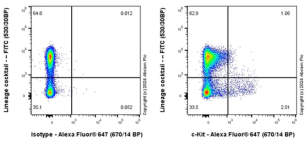
C-Kit/CD117 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-c-Kit/CD117 antibody

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized P815 (mouse mastocytoma mast cell) cells labelling c-Kit with ab317843 at 1/500 (0.992 ug/ml) dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 2 ug/mL dilution (Green).

Confocal image showing cytoplasmic staining in P815 cell line (shown in green). The counterstain was observed in magenta. Nuclear DNA was labeled with DAPI (shown in blue).
Negative control: NIH/3T3 (PMID: 29622475)
Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).

ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 2.5ug/ml dilution (Magenta). The Nuclear counterstain was DAPI (Blue).

Secondary antibody only control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 2 ug/mL dilution.



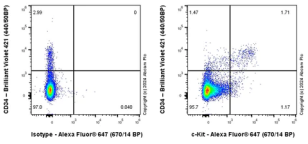
Flow Cytometry - Anti-c-Kit/CD117 antibody [RM1190] (ab317843)

C-Kit/CD117 Flow Cytometry staining of Mouse bone marrow using rabbit Anti-c-Kit/CD117 antibody

Flow cytometric analysis of Mouse bone marrow cells labelling c-Kit with ab317843 at 1/500 dilution (0.1 ug)/Right compared with a Rabbit monoclonal IgG (ab172730) / Left isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue).

Goat anti-Rabbit IgG (Alexa Fluor® 647, ab150083) at 1/5000 dilution was used as the secondary antibody.

Mouse bone marrow are co-stained with Lineage cocktail conjugated FITC (530/30BP).
Gated on viable cell.



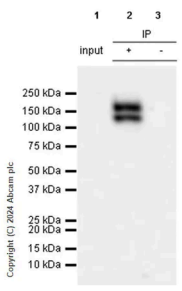
Flow Cytometry - Anti-c-Kit/CD117 antibody [RM1190] (ab317843)

C-Kit/CD117 Flow Cytometry staining of Mouse bone marrow using rabbit Anti-c-Kit/CD117 antibody

Flow cytometric analysis of Mouse bone marrow cells labelling c-Kit with ab317843 at 1/500 dilution (0.1ug)/Right compared with a Rabbit monoclonal IgG (ab172730) / Left isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue).

Goat anti-Rabbit IgG (Alexa Fluor® 647, ab150083) at 1/5000 dilution was used as the secondary antibody.

Mouse bone marrow are co-stained with CD34 conjugated BV421 (440/50BP).
Gated on viable cell.



Immunoprecipitation - Anti-c-Kit/CD117 antibody [RM1190] (ab317843)

c-Kit was immunoprecipitated from 0.35 mg P815 (mouse mastocytoma mast Cell) whole cell lysate with ab317843 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab317843 at 1/1000 dilution. VeriBlot for IP secondary antibody(HRP) (ab131366) was used at 1/5000 dilution.

Lane 1: P815 (mouse mastocytoma mast Cell) whole cell lysate
Lane 2: ab317843 IP in P815 (mouse mastocytoma mast Cell) whole cell lysate
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab317843 in P815 whole cell lysate

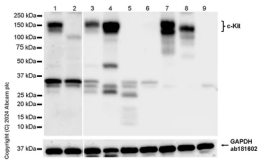
All lanes:
Immunoprecipitation - Anti-c-Kit/CD117 antibody [RM1190] (ab317843) at 1/30 dilution

All lanes:
P815 (mouse mastocytoma mast Cell) whole cell lysate

Secondary

All lanes:
Immunoprecipitation - VeriBlot for IP Detection Reagent (HRP) (ab131366) at 1/5000 dilution

Exposure time: 180s



Western blot - Anti-c-Kit/CD117 antibody [RM1190] (ab317843)

C-Kit/CD117 Western blot staining using rabbit Anti-c-Kit/CD117 antibody

Low expression: HL-60 (PMID: 29127384) and Jurkat (PMID: 22140461).

Negative control: NIH/3T3 (PMID: 29622475, PMID: 11522667)

The molecular weight observed is consistent with what has been described in the literature (PMID: 29176653, PMID: 23637779).

The identity of the lower MW bands at approximately 25-37kDa are unknown.

In Western blot, ab317843 was shown to bind specifically to c-Kit. Target of interest was observed at 120/140 kDa, in wild-type HAP1 cell lysates (lane 1) with no signal observed at this size in c-Kit knockout cell line (lane 2).

In Western blot, Anti-GAPDH antibody [EPR16891] - Loading Control (ab181602) staining at 1/200000 dilution.

Exposure time: Lanes 1-2: 180 seconds; Lanes 3-9: 15 seconds

Blocking and diluting buffer and concentration: 5% NFDM/TBST.

All lanes:
Western blot - Anti-c-Kit/CD117 antibody [RM1190] (ab317843) at 1/1000 dilution

Lane 1:
Wide-type HAP1 (human chronic myelogenous leukemia near-haploid cell) whole cell lysate at 20 µg

Lane 2:
Kit HAP1 knockout whole cell lysate at 20 µg

Lane 3:
HEL (human erythroleukemia erythroblast) whole cell lysate at 20 µg

Lane 4:
Saos-2 (human osteosarcoma epithelial cell) whole cell lysate at 20 µg

Lane 5:
HL-60 (human acute promyelocytic leukemia promyeloblast) whole cell lysate at 20 µg

Lane 6:
Jurkat (human T cell leukemia T lymphocyte from peripheral blood) whole cell lysate at 20 µg

Lane 7:
P815 (mouse mastocytoma mast cell) whole cell lysate at 20 µg

Lane 8:
ES-D3 D3 (mouse blastocyst-derived embryonic stem cell) whole cell lysate at 20 µg

Lane 9:
NIH/3T3 (mouse embryonic fibroblast) whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Observed band size: 120 kDa, 140 kDa, 36 kDa

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