abcam

ab283653

Anti-c-Kit/CD117 antibody [EPR25707-134]

Recombinant | RabMAb | 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	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR25707-134
Purification technique	Affinity purification Protein A
Concentration	0.55 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Human
Dilution info	1/250
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

IP

Tested

Species	Human
Dilution info	1/30
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt

Tested

Species	Human
Dilution info	1/500
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	1/1000
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	1/100
Notes	-

Not recommended

Species	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	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

Notes

This antibody clone is manufactured by Abcam. If you require a custom buffer formulation or conjugation for your experiments, please contact orders@abcam.com.

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.

What are the advantages of a recombinant monoclonal antibody?

This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

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

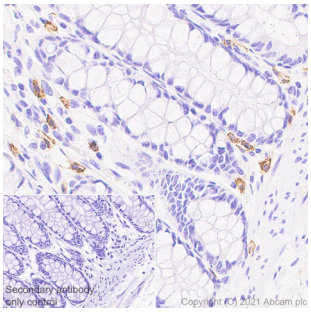
We do not recommend this combination. It is not covered by our product promise.

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.

13 product images

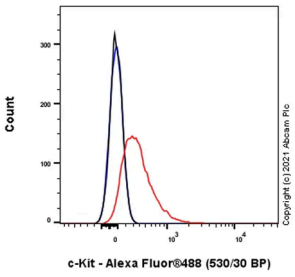


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-c-Kit/CD117 antibody [EPR25707-134] (ab283653)

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

Immunohistochemical analysis of paraffin-embedded Human colon tissue labelling c-Kit with ab283653 at 1/100 dilution followed by a ready to use LeicaDS9800 (BOND™ Polymer Refine Detection). Positive staining in lamina propria cells of human colon (PMID: 23276179). The section was incubated with ab283653 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).

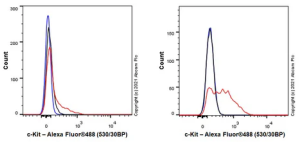
Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins



Flow Cytometry - Anti-c-Kit/CD117 antibody [EPR25707-134] (ab283653)

C-Kit/CD117 Flow Cytometry staining using rabbit Anti-c-Kit/CD117 antibody

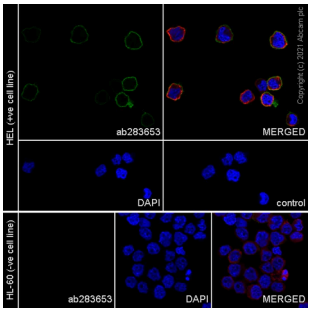
Flow cytometric analysis of HEL (human erythroleukemia erythroblast) cells labelling c-Kit with ab283653 (Red) at 1/500 dilution compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue). Goat F(ab')2 Anti-Rabbit IgG(DyLight® 488, ab98507) at 1/500 dilution was used as the secondary antibody. Gated on viable cells.



Flow Cytometry - Anti-c-Kit/CD117 antibody [EPR25707-134] (ab283653)

C-Kit/CD117 Flow Cytometry staining using rabbit Anti-c-Kit/CD117 antibody

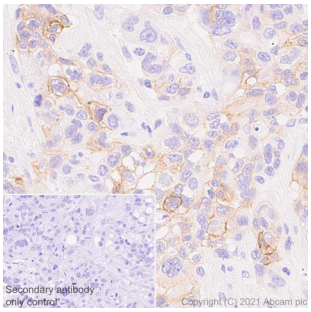
Flow cytometric analysis of HL-60 (Human Acute Promyelocytic Leukemia promyeloblast, Left)/ Saos-2 (human osteosarcoma epithelial, Right) cells labelling c-Kit with ab283653 at 1/500 (Red) compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue). Goat F(ab')2 Anti-Rabbit IgG(DyLight® 488, ab98507) at 1/500 was used as the secondary antibody. Negative control: HL-60 (PMID: 29127384). Gated on viable cells.



Immunocytochemistry/ Immunofluorescence - Anti-c-Kit/CD117 antibody [EPR25707-134] (ab283653)

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

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized HEL cells labelling c-Kit with ab283653 at 1/250 dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 dilution (Green).
Confocal image showing membranous staining in HEL cells. Negative control: HL-60 (PMID: 29127384) is observed. ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 dilution (Red). The Nuclear counterstain was DAPI (Blue). Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 dilution.

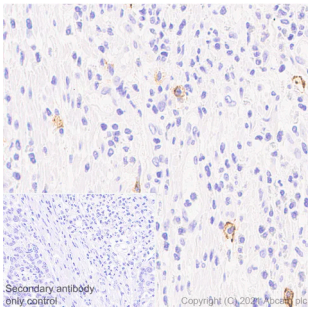


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-c-Kit/CD117 antibody [EPR25707-134] (ab283653)

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

Immunohistochemical analysis of paraffin-embedded Human breast cancer tissue labelling c-Kit with ab283653 at 1/100 dilution followed by a ready to use LeicaDS9800 (BOND™ Polymer Refine Detection). Positive staining on human breast cancer. The section was incubated with ab283653 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 with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins

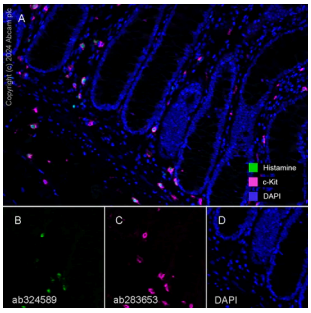


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-c-Kit/CD117 antibody [EPR25707-134] (ab283653)

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

Immunohistochemical analysis of paraffin-embedded human colon cancer tissue labelling c-Kit with ab283653 at 1/100 dilution followed by a ready to use LeicaDS9800 (BOND™ Polymer Refine Detection). Positive staining on stromal cells of human colon cancer (PMID: 23276179). The section was incubated with ab283653 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 with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins



Multiplex immunohistochemistry - Anti-c-Kit/CD117 antibody [EPR25707-134] (ab283653)

C-Kit/CD117 Multiplex immunohistochemistry staining of Human colon using rabbit Anti-c-Kit/CD117 antibody

Multiplex immunohistochemistry analysis of formalin/PFA-fixed paraffin-embedded human colon tissue staining Histamine with ab324589 at a 1:10000 (0.051 ug/ml) dilution, ab283653 anti-c-Kit used at 1:100 (5.73 ug/ml) dilution.

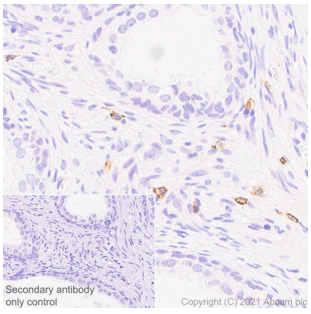
Panel A: merged staining of anti-Histamine (green; Opal™520) and anti-c-Kit (magenta; Opal™690) on human colon.
Panel B: anti-Histamine staining mast cells in human colon.
Panel C: ant-c-Kit staining mast cells in human colon.
Panel D: Nuclear DNA was labeled with DAPI (shown in blue).

The section was incubated in three rounds of staining: in the order of ab324589 and ab283653 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 with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins.

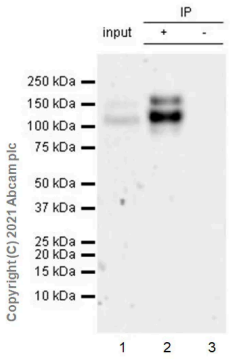


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-c-Kit/CD117 antibody [EPR25707-134] (ab283653)

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

Immunohistochemical analysis of paraffin-embedded Human hyperplastic prostate tissue labelling c-Kit with ab283653 at 1/100 dilution followed by a ready to use LeicaDS9800 (BOND™ Polymer Refine Detection). Positive staining on stromal cells of human hyperplastic prostate (PMID: 23276179). The section was incubated with ab283653 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 with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins



Immunoprecipitation - Anti-c-Kit/CD117 antibody [EPR25707-134] (ab283653)

c-Kit was immunoprecipitated from 0.35 mg Saos-2 (human osteosarcoma epithelial) whole cell lysate 10 µg with ab283653 at 1/30 dilution. Western blot was performed on the immunoprecipitate using ab283653 at 1/1000 dilution. VeriBlot for IP secondary antibody(HRP) (ab131366) was used at 1/5000 dilution.
Lane 1: Saos-2 (human osteosarcoma epithelial) whole cell lysate 10 µg

Lane 2: Saos-2 whole cell lysate

Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab283653 in Saos-2 whole cell lysate

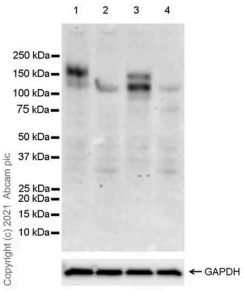
Blocking and dilution buffer and concentration: 5% NFDM/TBST.

Exposure time: 3 minutes

All lanes:
Immunoprecipitation - Anti-c-Kit/CD117 antibody [EPR25707-134] (ab283653)

Predicted band size: 109 kDa

Observed band size: 120 kDa, 140-160 kDa



Western blot - Anti-c-Kit/CD117 antibody [EPR25707-134] (ab283653)

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

Blocking buffer: 5% NFDM/TBST.
The difference in target band size observed in HEL and Saos-2 cell lysates is caused by glycosylation.

This blot was developed using a higher sensitivity ECL substrate.

All lanes:
Western blot - Anti-c-Kit/CD117 antibody [EPR25707-134] (ab283653) at 1/1000 dilution

Lane 1:
HEL (human erythroleukemia erythroblast) whole cell lysate at 20 µg

Lane 2:
HEL whole cell lysate treated with PNGase F at 20 µg

Lane 3:
Saos-2 (human osteosarcoma epithelial) whole cell lysate at 20 µg

Lane 4:
Saos-2 whole cell lysate treated with PNGase F at 20 µg

Secondary

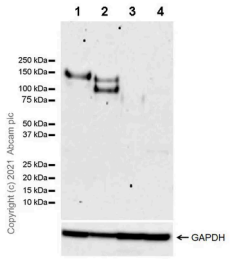
All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/50000 dilution

Developed using the ECL technique.

Predicted band size: 109 kDa

Observed band size: 120 kDa, 140-160 kDa

Exposure time: 3min



Western blot - Anti-c-Kit/CD117 antibody [EPR25707-134] (ab283653)

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

Blocking buffer: 5% NFDM/TBST.
Low expression: HL-60 (PMID: 29127384) and Jurkat (PMID: 22140461).

Bis-tris gel was used in the blot.

All lanes:
Western blot - Anti-c-Kit/CD117 antibody [EPR25707-134] (ab283653) at 1/1000 dilution

Lane 1:
HEL (human erythroleukemia erythroblast) whole cell lysate at 40 µg

Lane 2:
Saos-2 (human osteosarcoma epithelial) whole cell lysate at 40 µg

Lane 3:
HL-60 (human acute promyelocytic leukemia promyeloblast) whole cell lysate at 40 µg

Lane 4:
Jurkat (human T cell leukemia T lymphocyte) whole cell lysate at 40 µg

Secondary

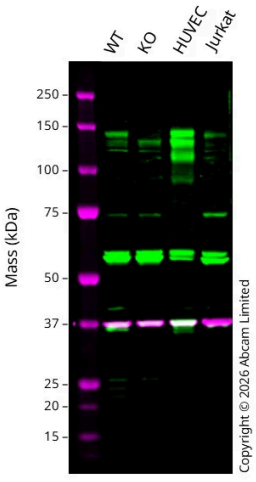
All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/50000 dilution

Developed using the ECL technique.

Predicted band size: 109 kDa

Observed band size: 120 kDa, 140-160 kDa

Exposure time: 3min



Western blot - Anti-c-Kit/CD117 antibody [EPR25707-134] (ab283653)

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

Western blot: Anti-c-Kit antibody [EPR25707-134] ab283653 staining at 1/1000 dilution, shown in green; Mouse anti GAPDH ab8245 loading control staining at 1/20000 dilution, shown in magenta. A band was observed at 140 kDa in Wild-type HAP1 cell lysates with no signal observed at this size in KIT knockout HAP1 cell line. To generate this image, samples were run on an SDS-PAGE gel then transferred onto a nitrocellulose membrane. Membranes were blocked in 5pc 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-c-Kit/CD117 antibody [EPR25707-134] (ab283653) at 1/1000 dilution

Lane 1:
Wild-type HAP1 at 20 µg

Lane 2:
KIT knockout HAP1 at 20 µg

Lane 3:
HUVEC at 20 µg

Lane 4:
Jurkat at 20 µg

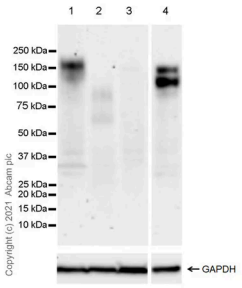
Secondary

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

Performed under reducing conditions.

Predicted band size: 140 kDa

Observed band size: 140 kDa



Western blot - Anti-c-Kit/CD117 antibody [EPR25707-134] (ab283653)

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

Blocking buffer: 5% NFDM/TBST.
Low expression: HL-60 (PMID: 29127384) and Jurkat (PMID: 22140461).

All lanes:
Western blot - Anti-c-Kit/CD117 antibody [EPR25707-134] (ab283653) at 1/1000 dilution

Lane 1:
HEL (human erythroleukemia erythroblast) whole cell lysate at 40 µg

Lane 2:
HL-60 (human acute promyelocytic leukemia promyeloblast) whole cell lysate at 40 µg

Lane 3:
Jurkat (human T cell leukemia T lymphocyte) whole cell lysate at 40 µg

Lane 4:
Saos-2 (human osteosarcoma epithelial) whole cell lysate at 40 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/50000 dilution

Developed using the ECL technique.

Predicted band size: 109 kDa

Observed band size: 120 kDa, 140-160 kDa

Exposure time: 125s

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