abcam

ab318282

Anti-CXCL10/IP-10 antibody [RM2054]

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
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	RM2054
Purification technique	Affinity purification Protein A
Concentration	0.499 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	1/2000
Notes	Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

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	-

ICC/IF

Tested

Species	Human
Dilution info	1/50
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 (Intra)

Tested

Species	Human
Dilution info	1/50
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

IHC-Fr

Not recommended

Species	Mouse, Rat, Human
Dilution info	-
Notes	-

Target data

See full target information CXCL10

Function	Pro-inflammatory cytokine that is involved in a wide variety of processes such as chemotaxis, differentiation, and activation of peripheral immune cells, regulation of cell growth, apoptosis and modulation of angiostatic effects (PubMed:11157474, PubMed:22652417, PubMed:7540647). Plays thereby an important role during viral infections by stimulating the activation and migration of immune cells to the infected sites (By similarity). Mechanistically, binding of CXCL10 to the CXCR3 receptor activates G protein-mediated signaling and results in downstream activation of phospholipase C-dependent pathway, an increase in intracellular calcium production and actin reorganization (PubMed:12750173, PubMed:19151743). In turn, recruitment of activated Th1 lymphocytes occurs at sites of inflammation (PubMed:12663757, PubMed:12750173). Activation of the CXCL10/CXCR3 axis also plays an important role in neurons in response to brain injury for activating microglia, the resident macrophage population of the central nervous system, and directing them to the lesion site. This recruitment is an essential element for neuronal reorganization (By similarity).

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	CXCL10 also known as Interferon Gamma-Induced Protein 10 (IP-10) is a chemokine with a molecular mass of about 10 kDa. This protein functions by binding to its receptor CXCR3 and plays a central role in the immune response by modulating the migration of immune cells particularly T cells NK cells and macrophages to inflamed tissues. CXCL10 is highly expressed in a variety of cell types including monocytes fibroblasts endothelial cells and various epithelial cells especially following stimulation by interferons or lipopolysaccharides.
Biological function summary	This chemokine mediates the effects of immune responses through its ability to attract and activate leukocytes. It does not form part of larger protein complexes functioning independently to influence inflammation and tissue damage repair processes. Its activity largely influences the immune surveillance system facilitating the body's ability to combat pathogens and abnormal cells by directing immune cells to sites that need a defense.
Pathways	CXCL10 functions in the context of the JAK-STAT signaling pathway which regulates gene expression in response to cytokines. It also plays a role in the NF-kB pathway a critical regulator of immune responses inflammation and cell proliferation. Through these pathways CXCL10 interacts with other chemokines and cytokines such as CXCL9 and CXCL11 affecting the recruitment and activation of CXCR3-expressing cells.
Associated diseases and disorders	CXCL10 relates closely to autoimmune conditions and chronic inflammation such as rheumatoid arthritis and inflammatory bowel disease. It collaborates with CXCL9 in the inflammatory cascade contributing to the pathology of these diseases by maintaining a cycle of immune cell recruitment and sustained tissue damage. Understanding the role of CXCL10 in these diseases can help develop therapeutic strategies that modulate its expression or block its interaction with its receptor CXCR3 to control excessive inflammation and tissue damage.

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.

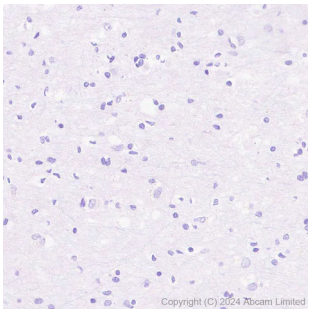
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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:
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10 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CXCL10/IP-10 antibody [RM2054] (ab318282)

CXCL10/IP-10 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Human cerebrum using rabbit Anti-CXCL10/IP-10 antibody

Immunohistochemical analysis of paraffin-embedded Human cerebrum tissue labeling CXCL10/IP-10 with ab318282 at 1/2000 (0.25 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

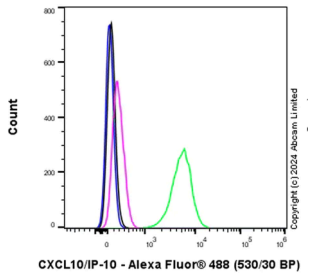
Negative control: No staining on human cerebrum (PMID: 14507644).
The section was incubated with ab318282 for 30 mins at room temperature.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument

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 citrate buffer (pH 9.0, epitope retrieval solution 2) for 20 mins

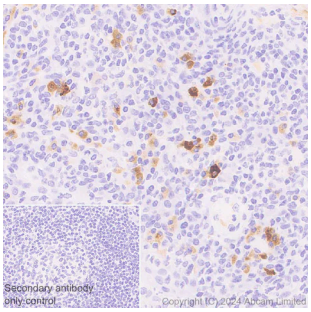
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Flow Cytometry (Intracellular) - Anti-CXCL10/IP-10 antibody [RM2054] (ab318282)

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized THP-1 (human monocytic leukemia monocyte) treated with 200ng/ml 3+21h and 50ng/ml 3+21h IFN-r, LPS then add 1ug/ml 21h BFA (green) /Untreated with THP-1 (magenta) cells labelling CXCL10/IP-10 with ab318282 at 1/50 dilution (1ug) / Green and magenta compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody).

Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/5000 dilution was used as the secondary antibody.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CXCL10/IP-10 antibody [RM2054] (ab318282)

Immunohistochemical analysis of paraffin-embedded Human tonsil tissue labeling CXCL10/IP-10 with ab318282 at 1/2000 (0.25 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

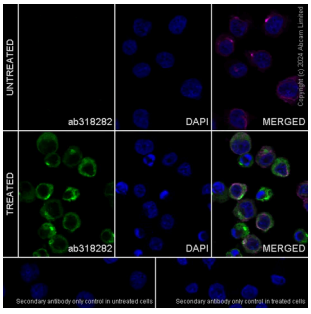
Positive staining on human tonsil (PMID: 12949239).
The section was incubated with ab318282 for 30 mins at room temperature.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument

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 citrate buffer (pH 9.0, epitope retrieval solution 2) for 20 mins

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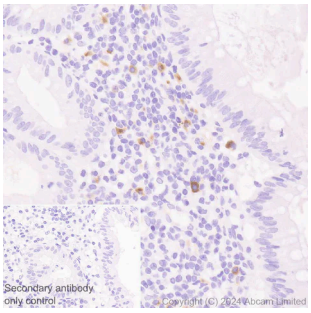
Immunocytochemistry/ Immunofluorescence - Anti-CXCL10/IP-10 antibody [RM2054] (ab318282)

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized THP-1 (human monocytic leukemia monocyte) cells labelling CXCL10/IP-10 with ab318282 at 1/50 (9.98 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 THP-1 cells treated with INF-γ (200 ng/mL) and Lipopolysaccharides (50 ng/mL) for 24 h add Brefeldin A (1µg/ml) for 21 h (shown in green). The counterstain was observed in magenta. Nuclear DNA was labeled with DAPI (shown in blue). 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.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CXCL10/IP-10 antibody [RM2054] (ab318282)

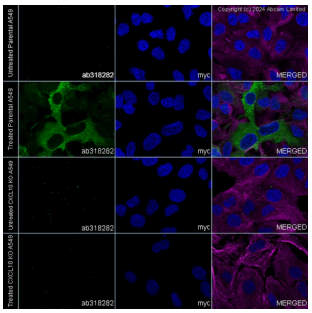
Immunohistochemical analysis of paraffin-embedded Human appendix tissue labeling CXCL10/IP-10 with ab318282 at 1/2000 (0.25 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Positive staining on human appendix immune cells (PMID: 10433925; PMID: 24748971).
The section was incubated with ab318282 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 citrate buffer (pH 9.0, epitope retrieval solution 2) for 20 mins



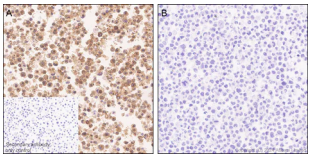
Immunocytochemistry/ Immunofluorescence - Anti-CXCL10/IP-10 antibody [RM2054] (ab318282)

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized CXCL10 KO A549 (human lung carcinoma epithelial cell) cells labelling CXCL10/IP-10 with ab318282 at 1/50 (9.98 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 parental A549 cells treated with INF-γ (100 ng/mL) and TNF-α (10 ng/mL) for 32 h, with addition of brefeldin A (5 µg/mL) for the last 6 h (shown in green), and negative staining in CXCL10 knockout A549 cells with the same condition. The counterstain was observed in magenta. Nuclear DNA was labeled with DAPI (shown in blue). 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.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CXCL10/IP-10 antibody [RM2054] (ab318282)

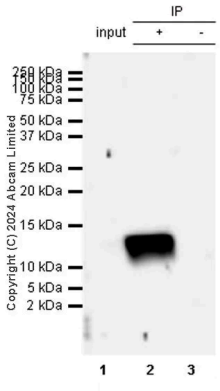
Immunohistochemical analysis of paraffin-embedded (A) THP-1 (human monocytic leukemia monocyte) treated with 200ng/ml IFN-y (ab259377) for 24 hours and 50ng/ml LPS for 24 hours, and 5ug/ml Brefeldin A for the last 21 hours cell pellet (B) Untreated THP-1 cell pellet tissue labeling CXCL10/IP-10 with ab318282 at 1/2000 (0.25 ug/ml) dilution, followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection).

Positive staining on (A) THP-1 (human monocytic leukemia monocyte) treated with 200ng/ml IFN-y for 24 hours and 50ng/ml LPS for 24 hours, and 5ug/ml Brefeldin A for the last 21 hours cell pellet. No staining on (B) Untreated THP-1 cell pellet.
The section was incubated with ab318282 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 citrate buffer (pH 9.0, epitope retrieval solution 2) for 20 mins



Immunoprecipitation - Anti-CXCL10/IP-10 antibody [RM2054] (ab318282)

CXCL10/IP-10 was immunoprecipitated from 0.35 mg THP-1(human monocytic leukemia monocyte) treated with 200 ng/ml INF gamma (ab259377) and 50 ng/ml LPS for 24 hours, and 5 ug/ml Brefeldin A (ab120299) for the last 21 hours whole cell lysate with ab318282 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab318282 at 1/1000 dilution. VeriBlot for IP secondary antibody(HRP)(ab131366) was used at 1/5000 dilution.

Lane 1: THP-1(human monocytic leukemia monocyte) treated with 200 ng/ml INF gamma (ab259377) and 50 ng/ml LPS for 24 hours, and 5 ug/ml Brefeldin A (ab120299) for the last 21 hours whole cell lysate
Lane 2: ab318282 IP in THP-1(human monocytic leukemia monocyte) treated with 200 ng/ml INF gamma (ab259377) and 50 ng/ml LPS for 24 hours, and 5 ug/ml Brefeldin A (ab120299) for the last 21 hours whole cell lysate
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab318282 in THP-1 treated with 200 ng/ml INF gamma (ab259377) and 50 ng/ml LPS for 24 hours, and 5 ug/ml Brefeldin A (ab120299) for the last 21 hours whole cell lysate

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

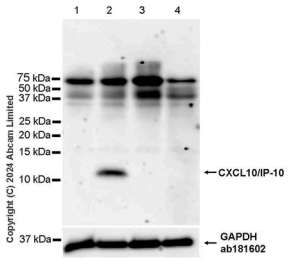
All lanes:
Immunoprecipitation - Anti-CXCL10/IP-10 antibody [RM2054] (ab318282) at 1/30 dilution

All lanes:
THP-1(human monocytic leukemia monocyte) treated with 200 ng/ml INF gamma (ab259377) and 50 ng/ml LPS for 24 hours, and 5 ug/ml Brefeldin A (ab120299) for the last 21 hours whole cell lysate

Secondary

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

Exposure time: 119s



Western blot - Anti-CXCL10/IP-10 antibody [RM2054] (ab318282)

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

In Western blot, ab318282 was shown to bind specifically to CXCL10/IP-10. Target of interest was observed at 11 kDa in wild-type A549 cell lysates treated with 100 ng/ml IFN gamma (ab259377) for 32 hours and 10 ng/m TNF alpha (ab259410) for 32 hours, and 5 ug/ml Brefeldin A (ab120299) for the last 6 hours (lane 2) with no signal observed at this size in CXCL10/IP-10 knockout cell line (lane 3-4) (lane 3, knockout cell line ab266971 / knockout cell lysate ab256888).

The identity of the bands between 35 kDa and 75 kDa are unknown.

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

All lanes:
Western blot - Anti-CXCL10/IP-10 antibody [RM2054] (ab318282) at 1/1000 dilution

Lane 1:
Untreated Wild-type A549 (human lung carcinoma epithelial cell) whole cell lysate at 50 µg

Lane 2:

Wild-type A549 treated with 100 ng/ml IFN gamma (ab259377) for 32 hours and 10 ng/m TNF alpha (ab259410) for 32 hours, and 5 µg/ml Brefeldin A (ab120299) for the last 6 hours whole cell lysate at 50 µg

Lane 3:
Untreated CXCL10/IP-10 knockout A549 whole cell lysate at 50 µg

Lane 4:
CXCL10/IP-10 knockout A549 treated with 100 ng/ml IFN gamma (ab259377) for 32 hours and 10 ng/m TNF alpha (ab259410) for 32 hours, and 5 µg/ml Brefeldin A (ab120299) for the last 6 hours whole cell lysate at 50 µg

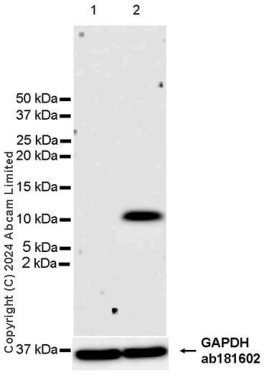
Secondary

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

Performed under reducing conditions.

Observed band size: 11 kDa, 36 kDa

Exposure time: 180s



Western blot - Anti-CXCL10/IP-10 antibody [RM2054] (ab318282)

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

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

All lanes:
Western blot - Anti-CXCL10/IP-10 antibody [RM2054] (ab318282) at 1/1000 dilution

Lane 1:
Untreated THP-1 (human monocytic leukemia monocyte) whole cell lysate at 20 µg

Lane 2:
THP-1 treated with 200 ng/ml INF gamma (ab259377) and 50 ng/ml LPS for 24 hours, and 5 µg/ml Brefeldin A (ab120299) for the last 21 hours whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Observed band size: 11 kDa, 36 kDa

Exposure time: 180s

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