abcam

ab305035

Anti-YKL-40/CHI3L1 antibody [EPR27396-56]

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	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR27396-56
Purification technique	Affinity purification Protein A
Concentration	0.546 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	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	1/500
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Not recommended

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

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

IHC-Fr

Not recommended

Species	Mouse, Human, Rat
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/50
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/500
Notes	-

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

IP

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information CHI3L1

Function	Carbohydrate-binding lectin with a preference for chitin. Has no chitinase activity. May play a role in tissue remodeling and in the capacity of cells to respond to and cope with changes in their environment. Plays a role in T-helper cell type 2 (Th2) inflammatory response and IL-13-induced inflammation, regulating allergen sensitization, inflammatory cell apoptosis, dendritic cell accumulation and M2 macrophage differentiation. Facilitates invasion of pathogenic enteric bacteria into colonic mucosa and lymphoid organs. Mediates activation of AKT1 signaling pathway and subsequent IL8 production in colonic epithelial cells. Regulates antibacterial responses in lung by contributing to macrophage bacterial killing, controlling bacterial dissemination and augmenting host tolerance. Also regulates hyperoxia-induced injury, inflammation and epithelial apoptosis in lung.

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

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	YKL-40 also known as chitinase-3-like protein 1 (CHI3L1) is a glycoprotein with a molecular weight of approximately 40 kDa. Scientists often study it for its roles in inflammatory processes. It has expressions in numerous tissues including liver cartilage and the central nervous system. The CHI3L1 protein does not possess chitinase activity unlike other members of the chitinase family yet it interacts with various ligands to influence cellular behavior.
Biological function summary	YKL-40 plays significant roles in tissue remodeling and inflammation. It does not form part of a larger complex by itself but influences several cellular processes. This protein affects cell proliferation migration and survival making it involved in both normal physiological processes and pathological conditions. CHI3L1 also exhibits a connection to the immune response where it modulates macrophage activity and interacts with other immune cells.
Pathways	YKL-40 is integral to the inflammatory and extracellular matrix pathways. It associates with proteins such as interleukin-6 (IL-6) and tumor necrosis factor-alpha (TNF-α) influencing signaling cascades that modulate inflammation. Through these interactions CHI3L1 becomes a mediator of connective tissue metabolism and immune reactions in various pathophysiological states.
Associated diseases and disorders	YKL-40 shows strong links to conditions like osteoarthritis and certain cancers. In osteoarthritis elevated levels of CHI3L1 reflect increased cartilage degradation while in oncology it correlates with tumor angiogenesis and metastasis potential. Its connection with proteins such as matrix metalloproteinases highlights its role in disease mechanisms highlighting its potential as a biomarker for early detection and disease progression monitoring.

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

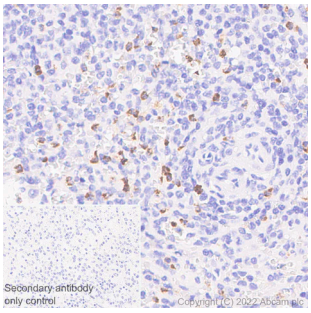
We do not recommend this combination. It is not covered by our product promise.

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.

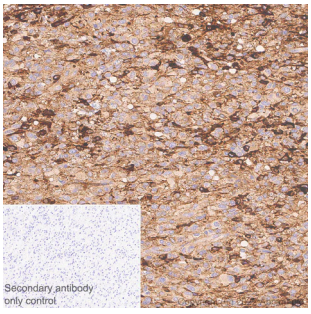
8 product images



Immunohistochemistry - Anti-YKL-40/CHI3L1 antibody [EPR27396-56] (ab305035)

YKL-40/CHI3L1 Immunohistochemistry staining of Human spleen using rabbit Anti-YKL-40/CHI3L1 antibody

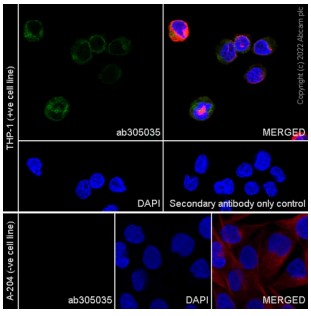
Immunohistochemical analysis of paraffin-embedded Human spleen tissue labeling YKL-40/CHI3L1 with ab305035 at 1/500 (1.092 ug/ml) followed by a ready to use LeicaDS9800 (Bond☒ Polymer Refine Detection) was used. Positive staining on human spleen. The section was incubated with ab305035 for 30 mins at 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



Immunohistochemistry - Anti-YKL-40/CHI3L1 antibody [EPR27396-56] (ab305035)

YKL-40/CHI3L1 Immunohistochemistry staining of Human glioma using rabbit Anti-YKL-40/CHI3L1 antibody

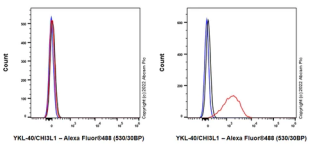
Immunohistochemical analysis of paraffin-embedded Human glioma tissue labeling YKL-40/CHI3L1 with ab305035 at 1/500 (1.092 ug/ml) followed by a ready to use LeicaDS9800 (Bond☒ Polymer Refine Detection) was used. Positive staining on human glioma. The section was incubated with ab305035 for 30 mins at 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



Immunocytochemistry - Anti-YKL-40/CHI3L1 antibody [EPR27396-56] (ab305035)

YKL-40/CHI3L1 Immunocytochemistry staining of THP-1 (human monocytic leukemia monocyte) using rabbit Anti-YKL-40/CHI3L1 antibody

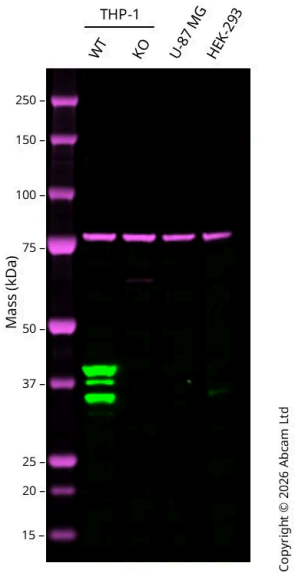
Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized THP-1 (human monocytic leukemia monocyte) cells labelling YKL-40/CHI3L1 with ab305035 at 1/50 (10.92 ug/ml) dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 2 ug/ml dilution (Green). Confocal image showing cytoplasmic staining in THP-1 cell line.Negative control: A-204.The image was taken with a confocal microscope (Leica-Microsystems, TCS SP8). is observed. ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 2.5 ug/ml dilution (Red). 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 (Intracellular) - Anti-YKL-40/CHI3L1 antibody [EPR27396-56] (ab305035)

YKL-40/CHI3L1 Flow Cytometry (Intracellular) staining using rabbit Anti-YKL-40/CHI3L1 antibody

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized A-204 (human muscle rhabdomyosarcoma, Left) / THP-1 (human monocytic leukemia monocyte, Right) cells labelling YKL-40/CHI3L1 with ab305035 at 1/500 dilution (0.1ug) (Red) (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). A Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/2000 dilution was used as the secondary antibody. Negative control: A-204.



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Western blot - Anti-YKL-40/CHI3L1 antibody [EPR27396-56] (ab305035)

YKL-40/CHI3L1 Western blot staining using rabbit Anti-YKL-40/CHI3L1 antibody

Western blot: Anti-YKL-40/CHI3L1 antibody [EPR27396-56] ab305035 staining at 1/1000 dilution, shown in green; Mouse anti-CANX ab238078 loading control staining at 1/20000 dilution, shown in magenta. A band was observed at 35-40 kDa in Wild-type THP-1 cell line with no signal observed at this size in CHI3L1 knockout THP-1 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-YKL-40/CHI3L1 antibody [EPR27396-56] (ab305035) at 1/1000 dilution

Lane 1:
Wild-type THP-1 at 20 µg

Lane 2:
Western blot - Human CHI3L1 knockout THP-1 cell line (ab280038) at 20 µg

Lane 3:
U-87 MG at 20 µg

Lane 4:
HEK-293 at 20 µg

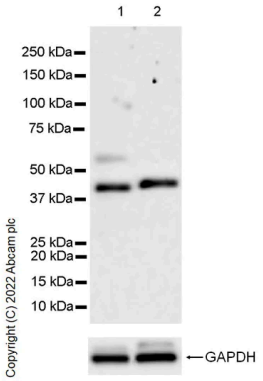
Secondary

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

Performed under reducing conditions.

Predicted band size: 40 kDa

Observed band size: 35-40 kDa



Western blot - Anti-YKL-40/CHI3L1 antibody [EPR27396-56] (ab305035)

Blocking and diluting buffer and concentration: 5% NFDM/TBST.
This blot was developed using a high sensitivity ECL substrate. The high-sensitivity ECL substrate used allows for the detection of proteins in the mid-femtogram range.

All lanes:
Western blot - Anti-YKL-40/CHI3L1 antibody [EPR27396-56] (ab305035) at 1/1000 dilution

Lane 1:
Human tonsil tissue lysate at 20 µg

Lane 2:
Human spleen tissue lysate at 20 µg

Secondary

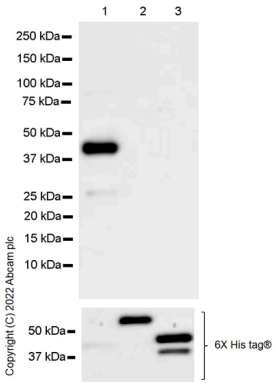
All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

Developed using the ECL technique.

Predicted band size: 43 kDa

Observed band size: 42 kDa

Exposure time: 180s



Western blot - Anti-YKL-40/CHI3L1 antibody [EPR27396-56] (ab305035)

Blocking and diluting buffer and concentration: 5% NFDM/TBST This antibody does not cross-react with human CHIT1 or CHI3L2. Exposure time: 8 seconds
All lanes:
Western blot - Anti-YKL-40/CHI3L1 antibody [EPR27396-56] (ab305035) at 1/1000 dilution

Lane 1:
Human CHI3L1 recombinant protein (No tag, aa22-383) at 10 ng

Lane 2:
293T transfected with human CHITI (aa 22-466) expression vector containing a His-tag, whole cell lysate at 20 µg

Lane 3:
293T transfected with human CHI3L2 (aa 27-390) expression vector containing a His-tag, whole cell lysate at 20 µg

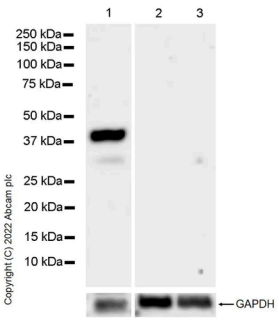
Secondary

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

Predicted band size: 43 kDa

Observed band size: 42 kDa

Exposure time: 8s



Western blot - Anti-YKL-40/CHI3L1 antibody [EPR27396-56] (ab305035)

Blocking and diluting buffer and concentration: 5% NFDM/TBST Negative controls: A-204, Jurkat (PMID: 16472595) Exposure time: 48 seconds
All lanes:
Western blot - Anti-YKL-40/CHI3L1 antibody [EPR27396-56] (ab305035) at 1/1000 dilution

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

Lane 2:
A-204 (human muscle rhabdomyosarcoma cell), whole cell lysate at 20 µg

Lane 3:
Jurkat (human T cell leukemia T lymphocyte), whole cell lysate at 20 µg

Secondary

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

Predicted band size: 43 kDa

Observed band size: 42 kDa

Exposure time: 48s

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