abcam

ab255297

Anti-YKL-40/CHI3L1 antibody [EPR19078-157]

Recombinant | RabMAb | KO Validated

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	EPR19078-157
Purification technique	Affinity purification Protein A
Concentration	0.54 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	-

ICC/IF

Not recommended

Species	Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/500
Notes	-

IHC-P

Tested

Species	Human
Dilution info	1/250
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

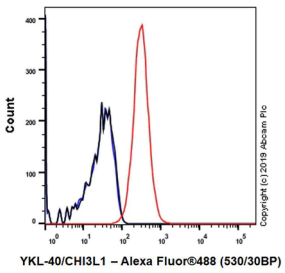
We do not recommend this combination. It is not covered by our product promise.

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.

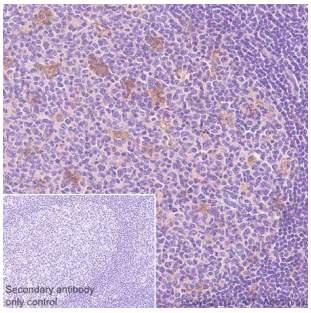
6 product images



Flow Cytometry (Intracellular) - Anti-YKL-40/CHI3L1 antibody [EPR19078-157] (ab255297)

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

Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed, 90% methanolpermeabilized THP-1 (human monocytic leukemia cell line) cells labelling YKL-40/CHI3L1 with ab255297 at 1/500 dilution (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 anti rabbit IgG (Alexa Fluor® 488, ab150077) at 1/2000 dilution was used as the secondary antibody.

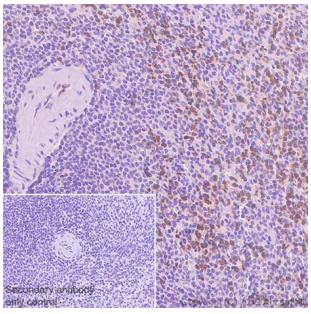


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-YKL-40/CHI3L1 antibody [EPR19078-157] (ab255297)

YKL-40/CHI3L1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-YKL-40/CHI3L1 antibody

Immunohistochemical analysis of paraffin-embedded human tonsil tissue labeling YKL-40/CHI3L1 with ab255297 at 1/250 dilution followed by a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Positive staining on macrophages in human tonsil germinal center is observed. The section was incubated with ab255297 for 30 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin.
Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution 2) for 20mins.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-YKL-40/CHI3L1 antibody [EPR19078-157] (ab255297)

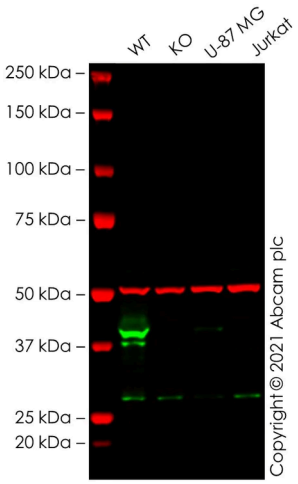
YKL-40/CHI3L1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-YKL-40/CHI3L1 antibody

Immunohistochemical analysis of paraffin-embedded human spleen tissue labeling YKL-40/CHI3L1 with ab255297 at 1/250 dilution followed by ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101). Positive staining on neutrophils of human spleen is observed.
The section was incubated with ab255297 for 30 mins at room temperature.

The immunostaining was performed on a Leica Biosystems BOND® RX instrument. Counterstained with Hematoxylin.

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

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).



Western blot - Anti-YKL-40/CHI3L1 antibody [EPR19078-157] (ab255297)

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

False colour image of Western blot: Anti-YKL-40/CHI3L1 antibody [EPR19078-157] staining at 1/1000 dilution, shown in green; Mouse anti-Alpha Tubulin [DM1A] (ab7291) loading control staining at 1/20000 dilution, shown in red. In Western blot, ab255297 was shown to bind specifically to YKL-40/CHI3L1. A band was observed at 37/40 kDa in wild-type THP-1 cell lysates with no signal observed at this size in CHI3L1 knockout cell line ab280038 (knockout cell lysate ab280097). To generate this image, wild-type and CHI3L1 knockout THP-1 cell lysates were analysed. First, samples were run on an SDS-PAGE gel then transferred onto a nitrocellulose membrane. Membranes were blocked in 3 % 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 IgG H&L (IRDye® 800CW) preabsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed (ab216776) at 1/20000 dilution.
All lanes:
Western blot - Anti-YKL-40/CHI3L1 antibody [EPR19078-157] (ab255297) at 1/1000 dilution

Lane 1:
Wild-type THP-1 cell lysate at 20 µg

Lane 2:
Western blot - Human CHI3L1 knockout THP-1 cell lysate (ab280097) at 20 µg

Lane 3:
U-87 MG cell lysate at 20 µg

Lane 4:
Jurkat cell lysate at 20 µg

Secondary

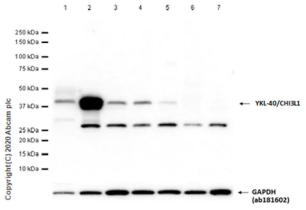
Lanes 1 - 4:
Western blot - Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) at 1/20000 dilution

Lanes 1 - 4:
Western blot - Goat anti-Mouse IgG H&L (IRDye® 680RD) preadsorbed (ab216776) at 1/20000 dilution

Performed under reducing conditions.

Predicted band size: 43 kDa

Observed band size: 37 kDa, 40 kDa, 55 kDa



Western blot - Anti-YKL-40/CHI3L1 antibody [EPR19078-157] (ab255297)

Blocking/Diluting buffer and concentration: 5% NFDM/TBST.
The expression profile observed in 293T and Jurkat are consistent with the literature (PMID: 19767768，PMID: 16472595).

All lanes:
Western blot - Anti-YKL-40/CHI3L1 antibody [EPR19078-157] (ab255297) at 1/1000 dilution

Lane 1:
Human spleen tissue lysate at 20 µg

Lane 2:
THP-1 (Human monocytic leukemia monocyte) whole cell lysate at 20 µg

Lane 3:
U-87 MG (Human glioblastoma-astrocytoma epithelial cell) whole cell lysate at 20 µg

Lane 4:
MG-63 (Human osteosarcoma fibroblast) whole cell lysate at 20 µg

Lane 5:
Caco-2 (Human colorectal adenocarcinoma epithelial cell) whole cell lysate at 20 µg

Lane 6:
293T (Human embryonic kidney epithelial cell) whole cell lysate at 20 µg

Lane 7:
Jurkat (Human T cell leukemia T lymphocyte) whole cell lysate at 20 µg

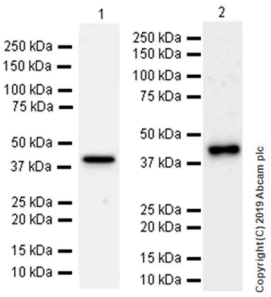
Secondary

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

Predicted band size: 43 kDa

Observed band size: 27 kDa, 42 kDa

Exposure time: 60s



Western blot - Anti-YKL-40/CHI3L1 antibody [EPR19078-157] (ab255297)

Blocking/Diluting buffer and concentration: 5% NFDM/TBST
Exposure time: 3 minutes

The molecular weight observed is consistent with what has been described in the literature (PMID 19414556).

All lanes:
Western blot - Anti-YKL-40/CHI3L1 antibody [EPR19078-157] (ab255297) at 1/1000 dilution

Lane 1:
Human spleen lysate at 20 µg

Lane 2:
THP-1 (human monocytic leukemia cell line) whole cell lysate at 20 µg

Secondary

Lane 1:
Western blot - VeriBlot for IP Detection Reagent (HRP) (ab131366) at 1/1000 dilution

Lane 2:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Predicted band size: 43 kDa

Observed band size: 42 kDa

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