abcam

ab314916

Anti-Neutrophil Elastase antibody [RM1077]

Anti-Neutrophil Elastase antibody [RM1077] (ab314916) is a rabbit recombinant multiclonal antibody detecting Neutrophil Elastase in **Western Blot, Flow Cytometry (Intra), IP, IHC-P, ICC/IF, ELISA**. Suitable for **Human, Mouse, Rat**.

- Biophysical QC for unrivalled batch-batch consistency

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	Multiclonal
Immunogens	The exact immunogen used to generate this antibody is proprietary information.
Clone number	RM1077
Purification technique	Affinity purification Protein A
Specificity	Unsuitable for mouse IP, FC-intra and ICC. Unsuitable for rat WB.
Concentration	0.507 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, Recombinant full length protein - Mouse
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.

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

Species	Rat
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	Recombinant full length protein - Mouse
Dilution info	-

Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/50
Notes	-

Expected

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

Not recommended

Species	Mouse, Recombinant full length protein - Mouse
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/500
Notes	-

Expected

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

Not recommended

Species	Mouse, Recombinant full length protein - Mouse
Dilution info	-
Notes	-

IP

Tested

Species	Human
Dilution info	1/30
Notes	-

Expected

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

Not recommended

Species	Mouse, Recombinant full length protein - Mouse
Dilution info	-
Notes	-

I-ELISA

Tested

Species	Recombinant full length protein - Mouse
Dilution info	1000 ng/mL
Notes	-

Expected

Species	Human, Mouse, Rat

Dilution info	Use at an assay dependent concentration.
Notes	-

IHC-Fr

Not recommended

Species	Mouse, Rat, Human, Recombinant full length protein - Mouse
Dilution info	-
Notes	-

Target data

See full target information ELANE

Function	Serine protease that modifies the functions of natural killer cells, monocytes and granulocytes. Inhibits C5a-dependent neutrophil enzyme release and chemotaxis (PubMed:15140022). Promotes cleavage of GSDMB, thereby inhibiting pyroptosis (PubMed:36899106). Promotes blood coagulation (PubMed:20676107). Through the activation of the platelet fibrinogen receptor integrin alpha-IIb/beta-3, potentiates platelet aggregation induced by a threshold concentration of cathepsin G (CTSG) (PubMed:25211214, PubMed:9111081). Cleaves and thus inactivates tissue factor pathway inhibitor (TFPI) (PubMed:20676107, PubMed:25211214). Capable of killing E.coli but not S.aureus in vitro; digests outer membrane protein A (ompA) in E.coli and K.pneumoniae (PubMed:10947984).

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 is this antibody validated in?
Anti-Neutrophil Elastase antibody [RM1077] (ab314916) is a rabbit recombinant recombinant multiclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Intra), Immunoprecipitation (IP), Immunohistochemistry (IHC-P), Immunocytochemistry/immunofluorescence (ICC/IF), ELISA in Human, Mouse, Rat samples.

What is the molecular weight of Neutrophil Elastase?
Anti-Neutrophil Elastase [RM1077] (ab314916) specifically detects a band for Neutrophil Elastase (UniProt: P08246) at a molecular weight of 29kDa.

Other related products
We have a range of other formats of antibody clone [RM1077] also available for your convenience: ab314916, Carrier free - ab314917

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.

Trial sizes available!
Test your antibody or perform pre-screening before committing to a larger quantity. Sold in 20µl. Discover our selection of trial-size antibodies.

Supplementary info

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

Activity summary	Neutrophil Elastase also known as neutrophil proteinase 3 has a molecular mass of approximately 30 kDa. It is a serine protease expressed mainly in azurophilic granules of neutrophils. This enzyme breaks down various proteins including elastin at sites of inflammation. Neutrophil Elastase releases during degranulation or through neutrophil extracellular traps (NETs) to combat pathogens.
Biological function summary	The target plays a significant role in neutrophil-mediated tissue remodeling and host defense. It leads to the breaking down of extracellular matrix components contributing to tissue remodeling and repair. Neutrophil Elastase is part of a complex interplay with other proteases like matrix metalloproteinases (MMPs). Its

	activity is regulated by endogenous inhibitors such as alpha-1 antitrypsin to prevent excessive tissue damage.
Pathways	This protease is important in inflammation and immune response pathways. It plays a role in the complement system by activating C5 a component of the complement cascade. It also acts in conjunction with other proteases such as cathepsin G to modulate immune and inflammatory responses. Neutrophil Elastase's role within these pathways is pivotal for the regulation of inflammation and destruction of pathogens.
Associated diseases and disorders	Individuals with conditions such as chronic obstructive pulmonary disease (COPD) and cystic fibrosis often exhibit dysregulation or excessive activity of Neutrophil Elastase. This excessive activity leads to tissue damage and exacerbates disease progression. The enzyme also interacts with proteins like elastin and collagen in these diseases further contributing to pathological tissue remodeling and 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

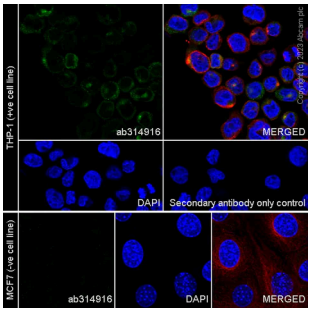
We do not recommend this combination. It is not covered by our product promise.

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.

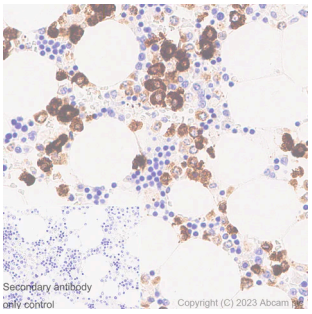
Full details and terms and conditions can be found here:
Terms & Conditions.

17 product images



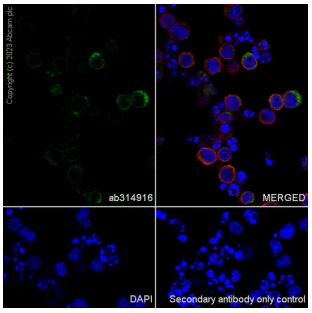
Immunocytochemistry/ Immunofluorescence - Anti-Neutrophil Elastase antibody [RM1077] (ab314916)

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized THP-1 (human monocytic leukemia monocyte cell) cells labelling Neutrophil Elastase with ab314916 at 1/50 (10.32 ug/ml) dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 (2ug/ml) dilution (Green). Confocal image showing cytoplasmic staining in THP-1 cell line. Negative control: MCF7. 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 (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 (2ug/ml) dilution.



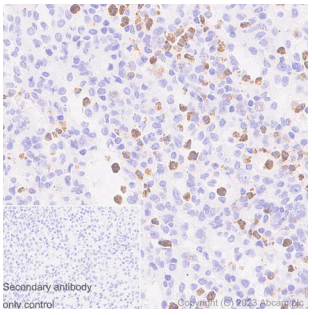
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Neutrophil Elastase antibody [RM1077] (ab314916)

Immunohistochemical analysis of paraffin-embedded human bone marrow tissue labeling Neutrophil Elastase with ab314916 at 1/500 (1.032 ug/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Positive staining on human bone marrow. The section was incubated with ab314916 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.



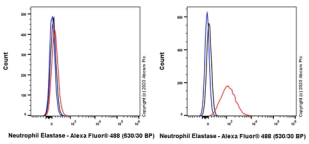
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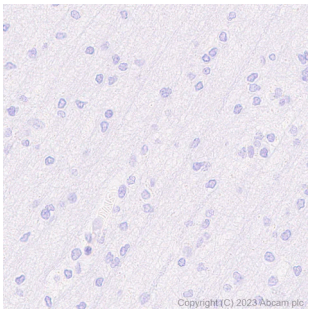
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Neutrophil Elastase antibody [RM1077] (ab314916)

Immunohistochemical analysis of paraffin-embedded human spleen tissue labeling Neutrophil Elastase with ab314916 at 1/500 (1.032 ug/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Positive staining on neutrophils in human spleen. The section was incubated with ab314916 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.



Flow Cytometry (Intracellular) - Anti-Neutrophil Elastase antibody [RM1077] (ab314916)

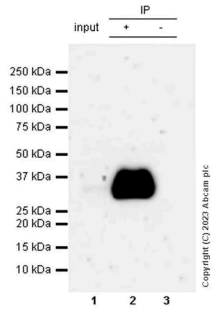
Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized MCF7 (human breast adenocarcinoma epithelial cell, Left) / THP-1 (human monocytic leukemia monocyte, Right) cells labelling Neutrophil Elastase with ab314916 at 1/500 dilution (0.1 ug)/Red compared with a Rabbit monoclonal 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 1/5000 dilution was used as the secondary antibody.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Neutrophil Elastase antibody [RM1077] (ab314916)

Neutrophil Elastase Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Human cerebrum using rabbit Anti-Neutrophil Elastase antibody

Immunohistochemical analysis of paraffin-embedded human cerebrum tissue labeling Neutrophil Elastase with ab314916 at 1/500 (1.032 ug/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Negative control: no staining on human cerebrum. The section was incubated with ab314916 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.



Immunoprecipitation - Anti-Neutrophil Elastase antibody [RM1077] (ab314916)

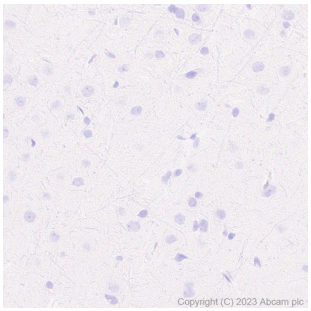
Neutrophil Elastase was immunoprecipitated from 0.35 mg THP-1 (human monocytic leukemia monocyte) whole cell lysate with ab314916 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab314916 at 1/1000 dilution. VeriBlot for IP secondary antibody(HRP)(ab131366) was used at 1/5000 dilution. Lane 1: THP-1 (human monocytic leukemia monocyte) whole cell lysate Lane 2: ab314916 IP in THP-1 (human monocytic leukemia monocyte) whole cell lysate Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab314916 in THP-1 whole cell lysate Blocking and dilution buffer and concentration: 5% NFDM/TBST.
All lanes:
Immunoprecipitation - Anti-Neutrophil Elastase antibody [RM1077] (ab314916) at 1/30 dilution

All lanes:
THP-1 (human monocytic leukemia monocyte) whole cell lysate

Secondary

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

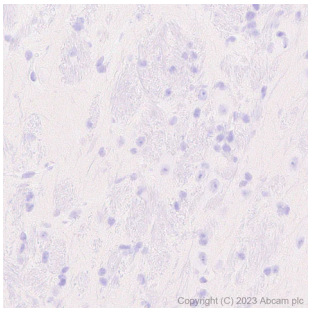
Exposure time: 180s



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Neutrophil Elastase antibody [RM1077] (ab314916)

Neutrophil Elastase Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Rat cerebrum using rabbit Anti-Neutrophil Elastase antibody

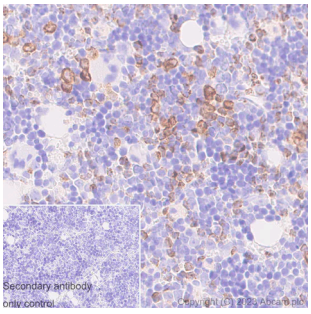
Immunohistochemical analysis of paraffin-embedded rat cerebrum tissue labeling Neutrophil Elastase with ab314916 at 1/500 (1.032 ug/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Negative control: no staining on rat cerebrum. The section was incubated with ab314916 for 30 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 (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Neutrophil Elastase antibody [RM1077] (ab314916)

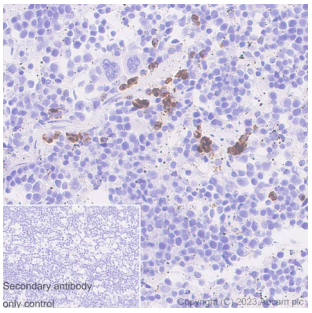
Neutrophil Elastase Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Mouse cerebrum using rabbit Anti-Neutrophil Elastase antibody

Immunohistochemical analysis of paraffin-embedded mouse cerebrum tissue labeling Neutrophil Elastase with ab314916 at 1/500 (1.032 ug/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Negative control: no staining on mouse cerebrum. The section was incubated with ab314916 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.



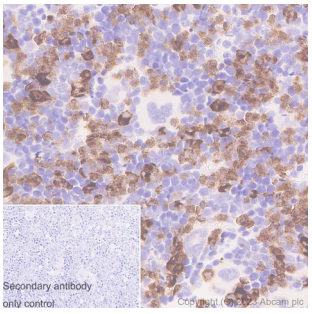
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Neutrophil Elastase antibody [RM1077] (ab314916)

Immunohistochemical analysis of paraffin-embedded rat bone marrow tissue labeling Neutrophil Elastase with ab314916 at 1/500 (1.032 ug/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Positive staining on rat bone marrow. The section was incubated with ab314916 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.



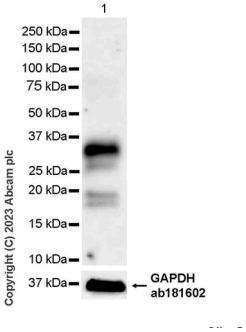
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Neutrophil Elastase antibody [RM1077] (ab314916)

Immunohistochemical analysis of paraffin-embedded mouse spleen tissue labeling Neutrophil Elastase with ab314916 at 1/500 (1.032 ug/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Positive staining on neutrophils in mouse spleen. The section was incubated with ab314916 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 (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Neutrophil Elastase antibody [RM1077] (ab314916)

Immunohistochemical analysis of paraffin-embedded mouse bone marrow tissue labeling Neutrophil Elastase with ab314916 at 1/500 (1.032 ug/ml) followed by a ready to use LeicaDS9800 (Bond™ Polymer Refine Detection). Positive staining on mouse bone marrow. The section was incubated with ab314916 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.



Western blot - Anti-Neutrophil Elastase antibody [RM1077] (ab314916)

Blocking and diluting buffer and concentration: 5% NFDM/TBST The expression profile observed is consistent with what has been described in the literature (PMID: 25857284). In Western blot, Anti-GAPDH antibody [EPR16891] - Loading Control (ab181602) staining at 1/200000 dilution.
All lanes:
Western blot - Anti-Neutrophil Elastase antibody [RM1077] (ab314916) at 1/1000 dilution

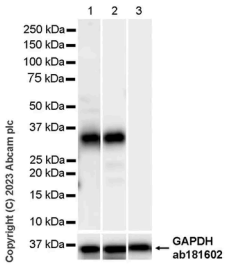
All lanes:
Human bone marrow at 20 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG (HRP) with minimal cross-reactivity with human IgG at 1/2000 dilution

Observed band size: 30 kDa, 20 kDa, 36 kDa

Exposure time: 125s



Western blot - Anti-Neutrophil Elastase antibody [RM1077] (ab314916)

Blocking and diluting buffer and concentration: 5% NFDM/TBST Negative control: MCF7 (PMID: 22564522), In Western blot, Anti-GAPDH antibody [EPR16891] - Loading Control (ab181602) staining at 1/200000 dilution. Exposure time: Lane 1: 59 seconds; Lanes 2-3: 8 seconds
All lanes:
Western blot - Anti-Neutrophil Elastase antibody [RM1077] (ab314916) at 1/1000 dilution

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

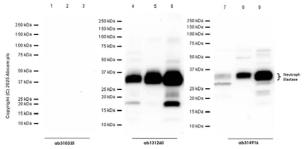
Lane 2:
U-937 (human histiocytic lymphoma monocyte) whole cell lysate at 20 µg

Lane 3:
MCF7 (human breast adenocarcinoma epithelial cell) 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: 30 kDa, 36 kDa



Western blot - Anti-Neutrophil Elastase antibody [RM1077] (ab314916)

Neutrophil Elastase Western blot staining using rabbit Anti-Neutrophil Elastase antibody

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

ab310335 is not suitable for detecting human cell lines in western blot assay. ab131260 and ab314916 are alternatives for detecting human cell lines.

Neutrophil elastase undergoes proteolytic cleavage to generate fragments (PMID: 25857284).

Lanes 1 - 3:
Western blot - Anti-Neutrophil Elastase antibody [EPR28386-66] (ab310335) at 1/1000 dilution

Lanes 4 - 6:
Western blot - Anti-Neutrophil Elastase antibody [EPR7479] (ab131260) at 1/1000 dilution

Lanes 7 - 9:
Western blot - Anti-Neutrophil Elastase antibody [RM1077] (ab314916) at 1/1000 dilution

Lanes 1, 4 and 7:
HL-60 (human Acute Promyelocytic Leukemia promyeloblast) whole cell lysate at 20 µg

Lanes 2, 5 and 8:
THP-1 (human monocytic leukemia monocyte) whole cell lysate at 20 µg

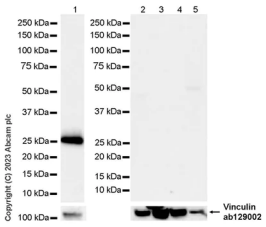
Lanes 3, 6 and 9:
U937 (human histiocytic lymphoma monocyte) whole cell lysate at 20 µg

Secondary

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

Observed band size: 30 kDa, 26 kDa

Exposure time: 40s



Western blot - Anti-Neutrophil Elastase antibody [RM1077] (ab314916)

Neutrophil Elastase Western blot staining using rabbit Anti-Neutrophil Elastase antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST Negative control: brain, heart, kidney, spleen(PMID: 24309898). In Western blot, Anti-Vinculin antibody [EPR8185] (ab129002) staining at 1/10000 dilution.
All lanes:
Western blot - Anti-Neutrophil Elastase antibody [RM1077] (ab314916) at 1/1000 dilution

Lane 1:
Mouse bone marrow tissue lysate at 20 µg

Lane 2:
Mouse brain tissue lysate at 20 µg

Lane 3:
Mouse heart tissue lysate at 20 µg

Lane 4:
Mouse kidney tissue lysate at 20 µg

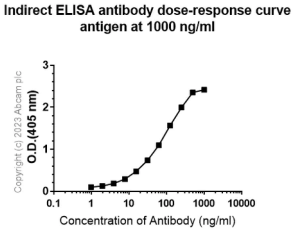
Lane 5:
Mouse spleen tissue lysate at 20 µg

Secondary

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

Observed band size: 30 kDa, 124 kDa

Exposure time: 6s



Indirect ELISA - Anti-Neutrophil Elastase antibody [RM1077] (ab314916)

Indirect ELISA analysis of ab314916 at 1000-0 ng/ml. The Secondary antibody used was Alkaline Phosphatase-conjugated AffiniPure Goat Anti-Rabbit IgG (H+L) at 1:2500 dilution. Antigen: Mouse Neutrophil Elastase. Antigen concentration: 1000 ng/ml

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