Anti-alpha 1 Antitrypsin antibody [EPR17087-50]
ab207303

Overview

Product name Anti-alpha 1 Antitrypsin antibody [EPR17087-50]
Description Rabbit monoclonal [EPR17087-50] to alpha 1 Antitrypsin
Host species Rabbit
Tested applications Suitable for: IHC-P, WB, IP, ICC/IF
Species reactivity Reacts with: Human
Immunogen Full length native protein (purified) corresponding to Human alpha 1 Antitrypsin. Database link: P01009
General notes

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 production
For more information see here.

Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

Properties

Form Liquid
Storage buffer Preservative: 0.01% Sodium azide
Constituents: PBS, 0.05% BSA, 40% Glycerol
Purity Protein A purified
Clonality: Monoclonal
Clone number: EPR17087-50
Isotype: IgG

Applications

Our Abpromise guarantee covers the use of ab207303 in the following tested applications.
The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

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<tr>
<th>Application</th>
<th>Abreviews</th>
<th>Notes</th>
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<tbody>
<tr>
<td>IHC-P</td>
<td>🌟🌟🌟🌟🌟</td>
<td>1/400. Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.</td>
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<td>WB</td>
<td></td>
<td>1/5000. Detects a band of approximately 51, 55 kDa (predicted molecular weight: 46 kDa).</td>
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<td>IP</td>
<td></td>
<td>1/20.</td>
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<tr>
<td>ICC/IF</td>
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<td>1/50.</td>
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Target

Function: Inhibitor of serine proteases. Its primary target is elastase, but it also has a moderate affinity for plasmin and thrombin. Irreversibly inhibits trypsin, chymotrypsin and plasminogen activator. The aberrant form inhibits insulin-induced NO synthesis in platelets, decreases coagulation time and has proteolytic activity against insulin and plasmin.
Short peptide from AAT: reversible chymotrypsin inhibitor. It also inhibits elastase, but not trypsin. Its major physiological function is the protection of the lower respiratory tract against proteolytic destruction by human leukocyte elastase (HLE).

Tissue specificity: Ubiquitous. Expressed in leukocytes and plasma.

Involvement in disease: Alpha-1-antitrypsin deficiency

Sequence similarities: Belongs to the serpin family.

Domain: The reactive center loop (RCL) extends out from the body of the protein and directs binding to the target protease. The protease cleaves the serpin at the reactive site within the RCL, establishing a covalent linkage between the carboxyl group of the serpin reactive site and the serine hydroxyl of the protease. The resulting inactive serpin-protease complex is highly stable.

Post-translational modifications: N-glycosylated. Differential glycosylation produces a number of isoforms. N-linked glycan at Asn-107 is alternatively di-antennary, tri-antennary or tetra-antennary. The glycan at Asn-70 is di-antennary with trace amounts of tri-antennary. Glycan at Asn-271 is exclusively di-antennary. Structure of glycans at Asn-70 and Asn-271 is Hex5HexNAc4. The structure of the antennae is Neu5Ac(alpha1-6)Gal(beta1-4)GlcNAc attached to the core structure Man(alpha1-6)[Man(alpha1-3)]Man(beta1-4)GlcNAC(beta1-4)GlcNAc. Some antennae are fucosylated, which forms a Lewis-X determinant. Proteolytic processing may yield the truncated form that ranges from Asp-30 to Lys-418.

Cellular localization: Secreted. Endoplasmic reticulum. The S and Z allele are not secreted effectively and accumulate intracellularly in the endoplasmic reticulum and Secreted, extracellular space, extracellular matrix.
Western blot - Anti-alpha 1 Antitrypsin antibody [EPR17087-50] (ab207303)

All lanes: Anti-alpha 1 Antitrypsin antibody [EPR17087-50] (ab207303) at 1/5000 dilution

Lane 1: Human liver lysate
Lane 2: Human heart lysate
Lane 3: Human kidney lysate
Lane 4: Human spleen lysate

Lysates/proteins at 20 µg per lane.

Secondary

All lanes: Goat Anti-Rabbit IgG Peroxidase Conjugate, specific to the non-reduced form of IgG at 1/10000 dilution

Predicted band size: 46 kDa
Observed band size: 51.55 kDa

why is the actual band size different from the predicted?

Exposure time: 1 minute

Blocking/Dilution buffer: 5% NFDM/TBST.

Anti-alpha 1 Antitrypsin antibody [EPR17087-50] (ab207303) at 1/5000 dilution + Human fetal liver lysate at 10 µg

Secondary

Goat Anti-Rabbit IgG Peroxidase Conjugate, specific to the non-reduced form of IgG. at 1/10000 dilution

Predicted band size: 46 kDa
Observed band size: 51.55 kDa

why is the actual band size different from the predicted?

Exposure time: 1 minute

Blocking/Dilution buffer: 5% NFDM/TBST.
Immunohistochemical analysis of paraffin-embedded human hepatocellular carcinoma tissue labeling alpha 1 Antitrypsin with ab207303 at 1/400 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution. Cytoplasmic staining on cancer cells of human hepatocellular carcinoma is observed. Counter stained with Hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Immunohistochemical analysis of paraffin-embedded human liver tissue labeling alpha 1 Antitrypsin with ab207303 at 1/400 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution. Cytoplasmic staining on human liver is observed. Counter stained with Hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.
Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized HepG2 (Human liver hepatocellular carcinoma) cells labeling alpha 1 Antitrypsin with ab207303 at 1/50 dilution, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green). Confocal image showing cytoplasmic staining on HepG2 cell line. The nuclear counter stain is DAPI (blue). Tubulin is detected with Anti-alpha Tubulin mouse mAb (ab7291) at 1/1000 dilution, followed by Goat Anti-Mouse Alexa Fluor® 594 (ab150120) secondary antibody at 1/1000 dilution (red).

The negative controls are as follows:
-ve control 1: ab207303 at 1/50 dilution followed by Goat Anti-Mouse Alexa Fluor® 594 (ab150120) secondary antibody at 1/1000 dilution.
-ve control 2: Anti-alpha Tubulin mouse mAb (ab7291) at 1/1000 dilution followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution.

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized K562 (Human chronic myelogenous leukemia cells from bone marrow) cells labeling alpha 1 Antitrypsin with ab207303 at 1/50 dilution, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green). Confocal image showing cytoplasmic staining on K562 cell line. The nuclear counter stain is DAPI (blue). Tubulin is detected with Anti-alpha Tubulin mouse mAb (ab7291) at 1/1000 dilution, followed by Goat Anti-Mouse IgG H&L (Alexa Fluor® 594) (ab150120) secondary at 1/1000 dilution (red).

The negative controls are as follows:
-ve control 1: ab207303 at 1/50 dilution followed by Goat Anti-Mouse IgG H&L (Alexa Fluor® 594) (ab150120) secondary at 1/1000 dilution.
-ve control 2: Anti-alpha Tubulin mouse mAb (ab7291) at 1/1000 dilution followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) at 1/1000 dilution.
alpha 1 Antitrypsin was immunoprecipitated from 1mg of HepG2 (Human liver hepatocellular carcinoma) whole cell lysate with ab207303 at 1/20 dilution. Western blot was performed from the immunoprecipitate using ab207303 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP) (ab131366), was used for detection at 1/10000 dilution.

Lane 1: HepG2 whole cell lysate 10ug (Input).
Lane 2: ab207303 IP in HepG2 whole cell lysate.
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab207303 in HepG2 whole cell lysate.

Blocking and dilution buffer and concentration: 5% NFDM/TBST.
Exposure time: 3 seconds.

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