abcam

ab300447

Anti-HEXA antibody [EPR26394-74]

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	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR26394-74
Purification technique	Affinity purification Protein A
Concentration	0.577 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Mouse
Dilution info	1/30
Notes	-

Expected

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

Not recommended

Species	Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Rat
Dilution info	1/500
Notes	-

Species	Mouse
Dilution info	1/500
Notes	-

Not recommended

Species	Human
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Rat
Dilution info	1/50
Notes	-

Species	Mouse
Dilution info	1/50
Notes	-

Not recommended

Species	Human
Dilution info	-
Notes	-

IHC-P

Tested

Species	Rat
Dilution info	1/2000
Notes	-

Species	Mouse
Dilution info	1/2000
Notes	-

Not recommended

Species	Human
Dilution info	-
Notes	-

IHC-Fr

Expected

Species	Mouse
Dilution info	1/50
Notes	-

Species	Rat
Dilution info	1/50
Notes	-

Not recommended

Species	Human
Dilution info	-
Notes	-

WB

Tested

Species	Rat
Dilution info	1/1000
Notes	-

Species	Mouse
Dilution info	1/1000
Notes	-

Not recommended

Species	Human
Dilution info	-
Notes	-

Target data

See full target information Beta-hexosaminidase subunit alpha

Function	Hydrolyzes the non-reducing end N-acetyl-D-hexosamine and/or sulfated N-acetyl-D-hexosamine of glycoconjugates, such as the oligosaccharide moieties from proteins and neutral glycolipids, or from certain mucopolysaccharides. The isozyme S is as active as the isozyme A on the anionic bis-sulfated glycans, the chondroitin-6-sulfate trisaccharide (C6S-3), and the dermatan sulfate pentasaccharide, and the sulfated glycosphingolipid SM2. The isozyme B does not

hydrolyze each of these substrates, however hydrolyzes efficiently neutral oligosaccharide. Only the isozyme A is responsible for the degradation of GM2 gangliosides in the presence of GM2A.

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	The HEXA gene codes for the enzyme Hexosaminidase A also known as hexosaminidase alpha or HEXA subunit. This enzyme has several subunits with a molecular mass of approximately 58 kDa. HEXA expresses in various tissues but it shows high expression in the brain and other neural tissues. Mechanically Hexosaminidase A is involved in the hydrolysis of GM2 gangliosides into GM3 by removing the N-acetylgalactosamine residue which plays a role in the degradation of glycolipids within lysosomes.

Biological function summary	Hexosaminidase A functions as part of the lysosomal enzyme complex partnering with the GM2 activator protein and another related enzyme Hexosaminidase B. The complex is critical in the catabolism of GM2 gangliosides a type of lipid found in cell membranes specifically in neuronal cell membranes. Efficient function of Hexosaminidase A prevents accumulation of the lipid ensuring cellular health particularly in neurons.
Pathways	Hexosaminidase A is significant within glycolipid metabolism pathways and lysosomal degradation pathways. It cooperates closely with enzymes like Hexosaminidase B and the GM2 activator protein within these processes. These pathways are important for the breakdown of gangliosides which prevents their accumulation and maintains cellular function in neuronal tissues.
Associated diseases and disorders	HEXA mutations have a direct link to Tay-Sachs disease a severe genetic disorder affecting nerve cells. This disorder results from HEXA mutations causing deficient enzyme activity leading to GM2 ganglioside accumulation. Additionally Sandhoff disease links through similar pathways though its relation more involves Hexosaminidase B deficiencies. Both disorders highlight the importance of a functioning Hexosaminidase A enzyme for normal neurological function.

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

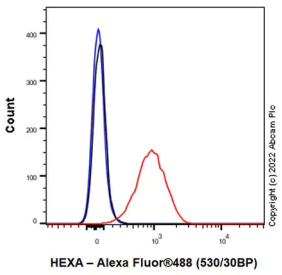
We do not recommend this combination. It is not covered by our product promise.

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.

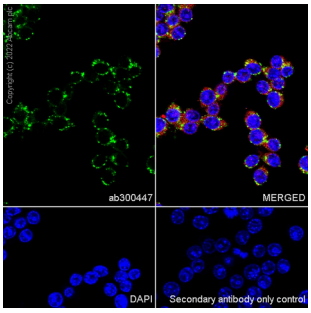
Full details and terms and conditions can be found here:
Terms & Conditions.

9 product images



Flow Cytometry (Intracellular) - Anti-HEXA antibody [EPR26394-74] (ab300447)

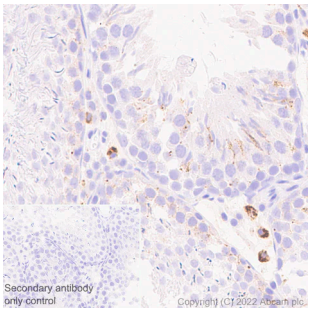
Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized PC-12 (Rat adrenal gland pheochromocytoma) cells labelling HEXA with ab300447 at 1/500 dilution (0.1ug) (Red) (Red) compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabelled control (cells 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.



Immunocytochemistry/ Immunofluorescence - Anti-HEXA antibody [EPR26394-74] (ab300447)

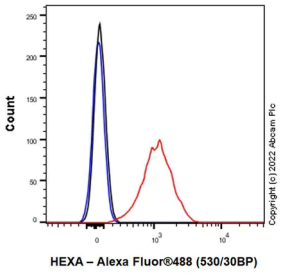
HEXA Immunocytochemistry/ Immunofluorescence staining of RAW 264.7 (mouse abelson murine leukemia virus-induced tumor macrophage) using rabbit Anti-HEXA antibody

Immunofluorescent analysis of 100% methanol-fixed, 0.1% TritonX-100 permeabilized RAW 264.7 (mouse abelson murine leukemia virus-induced tumor macrophage) cells labelling HEXA with ab300447 at 1/50 (11.54 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 RAW 264.7 cell line is observed. 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.



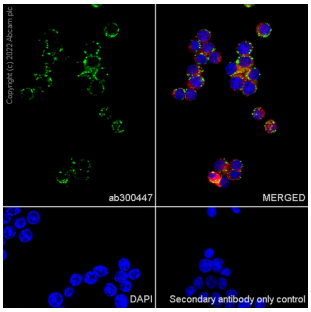
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-HEXA antibody [EPR26394-74] (ab300447)

Immunohistochemical analysis of paraffin-embedded Rat testis tissue labeling HEXA with ab300447 at 1/2000 (0.289 ug/ml) followed by a ready to use LeicaDS9800 (Bond☒ Polymer Refine Detection) was used. Positive staining on rat testis. The section was incubated with ab300447 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) was used.Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins



Flow Cytometry (Intracellular) - Anti-HEXA antibody [EPR26394-74] (ab300447)

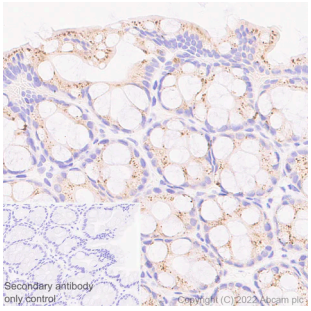
Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized RAW 264.7 (Mouse Abelson murine leukemia virus-induced tumor macrophage) cells labelling HEXA with ab300447 at 1/500 dilution (0.1ug) (Red) (Red) compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and 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.



Immunocytochemistry/ Immunofluorescence - Anti-HEXA antibody [EPR26394-74] (ab300447)

HEXA Immunocytochemistry/ Immunofluorescence staining of PC-12 (rat adrenal gland pheochromocytoma small irregularly shaped cells) using rabbit Anti-HEXA antibody

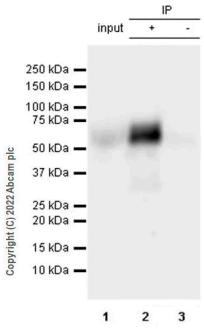
Immunofluorescent analysis of 80% Methanol-fixed, 0.1% TritonX-100 permeabilized PC-12 (rat adrenal gland pheochromocytoma small irregularly shaped cells) cells labelling HEXA with ab300447 at 1/50 (11.54 ug/ml) dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 2ug/mL dilution (Green). Confocal image showing cytoplasmic staining in PC-12 cell line is observed. 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-HEXA antibody [EPR26394-74] (ab300447)

HEXA Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Mouse colon using rabbit Anti-HEXA antibody

Immunohistochemical analysis of paraffin-embedded Mouse colon tissue labeling HEXA with ab300447 at 1/2000 (0.289 ug/ml) followed by a ready to use LeicaDS9800 (Bond☒ Polymer Refine Detection) was used. Positive staining on mouse colon. The section was incubated with ab300447 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) was used.Heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0, epitope retrieval solution2) for 20 mins



Immunoprecipitation - Anti-HEXA antibody [EPR26394-74] (ab300447)

HEXA was immunoprecipitated from 0.35 mg RAW264.7 (mouse Abelson murine leukemia virus-induced tumor macrophage) whole cell lysate 10 ug with ab300447 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab300447 at 1/1000 dilution. VeriBlot for IP secondary antibody (HRP) (ab131366) was used at 1/5000 dilution.
Lane 1: RAW264.7 (mouse Abelson murine leukemia virus-induced tumor macrophage) whole cell lysate 10 ug

Lane 2: ab300447 IP in RAW264.7 whole cell lysate

Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab300447 in RAW264.7 whole cell lysate

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

Exposure time: 3.25 seconds

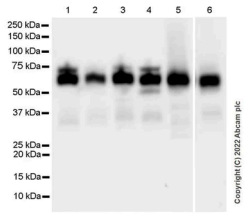
All lanes:
Immunoprecipitation - Anti-HEXA antibody [EPR26394-74] (ab300447) at 1/1000 dilution

All lanes:
RAW264.7 whole cell lysate at 10 µg

Secondary

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

Exposure time: 3.25s



Western blot - Anti-HEXA antibody [EPR26394-74] (ab300447)

Blocking and diluting buffer and concentration: 5% NFDM/TBST
All lanes:
Western blot - Anti-HEXA antibody [EPR26394-74] (ab300447) at 1/1000 dilution

Lane 1:
Mouse testis tissue lysate

Lane 2:
Mouse heart tissue lysate

Lane 3:
Mouse liver tissue lysate

Lane 4:
Rat testis tissue lysate

Lane 5:
Rat liver tissue lysate

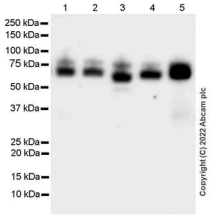
Lane 6:
Rat heart tissue lysate

Secondary

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

Performed under reducing conditions.

Observed band size: 61 kDa, 54 kDa



Western blot - Anti-HEXA antibody [EPR26394-74] (ab300447)

Blocking and diluting buffer and concentration: 5% NFDM/TBST
All lanes:
Western blot - Anti-HEXA antibody [EPR26394-74] (ab300447) at 1/1000 dilution

Lane 1:
NIH/3T3 (mouse embryonic fibroblast) whole cell lysate

Lane 2:
C2C12 (mouse myoblasts myoblast) whole cell lysate

Lane 3:
PC-12 (rat adrenal gland pheochromocytoma) whole cell lysate

Lane 4:
C6 (rat glial tumor glial cell) whole cell lysate

Lane 5:
RAW264.7 (mouse Abelson murine leukemia virus-induced tumor macrophage) whole cell lysate

Secondary

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

Performed under reducing conditions.

Observed band size: 61 kDa, 54 kDa

Exposure time: 26s

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