abcam

Product datasheet

Anti-Apolipoprotein E antibody [EPR19378] ab183596

KO VALIDATED Recombinant RabMAb

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Overview

Product name	Anti-Apolipoprotein E antibody [EPR19378]
Description	Rabbit monoclonal [EPR19378] to Apolipoprotein E
Host species	Rabbit
Tested applications	**Suitable for:** IHC-P, WB, IP, IHC-Fr
Species reactivity	**Reacts with:** Mouse, Rat
Immunogen	Recombinant fragment. This information is proprietary to Abcam and/or its suppliers.
Positive control	WB: Mouse plasma; Mouse liver, brain and kidney lysates; Rat plasma; Rat liver, brain and kidney lysates. IHC-P: Mouse cerebral cortex and liver tissues; Rat cerebral cortex and spleen tissues. IHC-Fr: Mouse cortex tissue. IP: Mouse plasma.
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 instructions	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C long term. Avoid freeze / thaw cycle.
Storage buffer	pH: 7.2 Preservative: 0.01% Sodium azide Constituents: 59% PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Purity	Protein A purified
Clonality	Monoclonal
Clone number	EPR19378

Isotype IgG

Applications

The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab183596 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
IHC-P		1/4000. Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.
WB		1/5000. Detects a band of approximately 36 kDa (predicted molecular weight: 36 kDa).
IP	★★☆☆☆ (1)	1/30.
IHC-Fr		1/500.

Target

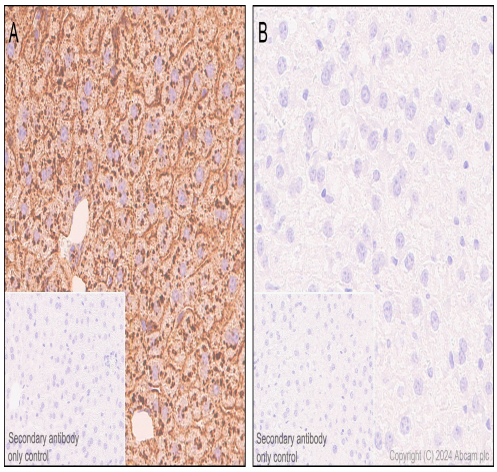
Function Mediates the binding, internalization, and catabolism of lipoprotein particles. It can serve as a ligand for the LDL (apo B/E) receptor and for the specific apo-E receptor (chylomicron remnant) of hepatic tissues.

Tissue specificity Occurs in all lipoprotein fractions in plasma. It constitutes 10-20% of very low density lipoproteins (VLDL) and 1-2% of high density lipoproteins (HDL). APOE is produced in most organs. Significant quantities are produced in liver, brain, spleen, lung, adrenal, ovary, kidney and muscle.

Involvement in disease Defects in APOE are a cause of hyperlipoproteinemia type 3 (HLPP3) [MIM:107741]; also known as familial dysbetalipoproteinemia. Individuals with HLPP3 are clinically characterized by xanthomas, yellowish lipid deposits in the palmar crease, or less specific on tendons and on elbows. The disorder rarely manifests before the third decade in men. In women, it is usually expressed only after the menopause. The vast majority of the patients are homozygous for APOE*2 alleles. More severe cases of HLPP3 have also been observed in individuals heterozygous for rare APOE variants. The influence of APOE on lipid levels is often suggested to have major implications for the risk of coronary artery disease (CAD). Individuals carrying the common APOE*4 variant are at higher risk of CAD.
Genetic variations in APOE are associated with Alzheimer disease type 2 (AD2) [MIM:104310]. It is a late-onset neurodegenerative disorder characterized by progressive dementia, loss of cognitive abilities, and deposition of fibrillar amyloid proteins as intraneuronal neurofibrillary tangles, extracellular amyloid plaques and vascular amyloid deposits. The major constituent of these plaques is the neurotoxic amyloid-beta-APP 40-42 peptide (s), derived proteolytically from the transmembrane precursor protein APP by sequential secretase processing. The cytotoxic C-terminal fragments (CTFs) and the caspase-cleaved products such as C31 derived from APP, are also implicated in neuronal death. Note=The APOE*4 allele is genetically associated with the common late onset familial and sporadic forms of Alzheimer disease. Risk for AD increased from 20% to 90% and mean age at onset decreased from 84 to 68 years with increasing number of APOE*4 alleles in 42 families with late onset AD. Thus APOE*4 gene dose is a major risk factor for late onset AD and, in these families, homozygosity for APOE*4 was virtually sufficient to cause AD by age 80. The mechanism by which APOE*4 participates in pathogenesis is not known.

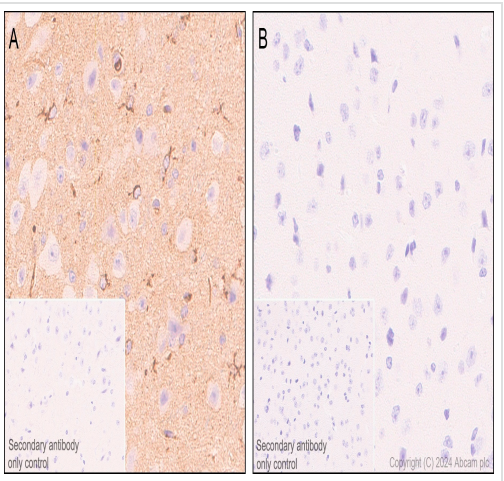
	Defects in APOE are a cause of sea-blue histiocyte disease (SBHD) [MIM:269600]; also known as sea-blue histiocytosis. This disorder is characterized by splenomegaly, mild thrombocytopenia and, in the bone marrow, numerous histiocytes containing cytoplasmic granules which stain bright blue with the usual hematologic stains. The syndrome is the consequence of an inherited metabolic defect analogous to Gaucher disease and other sphingolipidoses. Defects in APOE are a cause of lipoprotein glomerulopathy (LPG) [MIM:611771]. LPG is an uncommon kidney disease characterized by proteinuria, progressive kidney failure, and distinctive lipoprotein thrombi in glomerular capillaries. It mainly affects people of Japanese and Chinese origin. The disorder has rarely been described in Caucasians.
Sequence similarities	Belongs to the apolipoprotein A1/A4/E family.
Post-translational modifications	Synthesized with the sialic acid attached by O-glycosidic linkage and is subsequently desialylated in plasma. O-glycosylated with core 1 or possibly core 8 glycans. Thr-307 is a minor glycosylation site compared to Ser-308. Glycated in plasma VLDL of normal subjects, and of hyperglycemic diabetic patients at a higher level (2-3 fold). Phosphorylation sites are present in the extracelllular medium.
Cellular localization	Secreted.

Images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Apolipoprotein E antibody [EPR19378] (ab183596)

Immunohistochemical analysis of paraffin-embedded (A) Liver tissue from wild-type C57BL/6JGpt mice (B) Liver tissue from APOE knockout mice staining with ab183596 at 1/10000 dilution and ready-to-use Goat Anti-Rabbit IgG H&L (HRP) secondary. Counterstaining with hematoxylin. Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins. The section was incubated with ab183596 for 30 mins at room temperature. Positive staining on Brown (A) Liver tissue from wild-type C57BL/6JGpt mice and no staining on (B) Liver tissue from APOE knockout mice. The immunostaining was performed on a Leica Biosystems BOND™ RX instrument The tissue samples were kindly provided by GemPharmatech. C57BL/6JGpt wildtype mice and APOE-KO homozygous mice (Strain ID: T001458).



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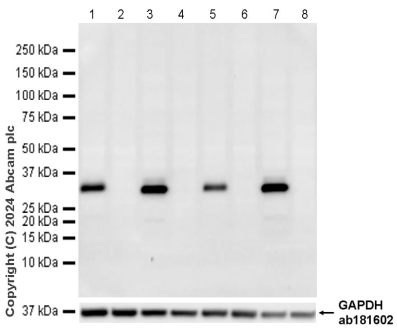


Western blot - Anti-Apolipoprotein E antibody [EPR19378] (ab183596)

All lanes : Anti-Apolipoprotein E antibody [EPR19378] (ab183596) at 1/1000 dilution

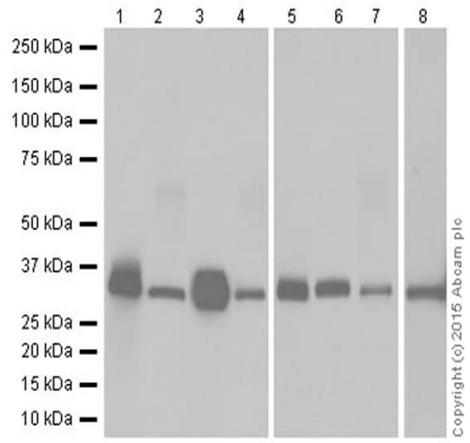
Lane 1 : Wild-type mouse brain tissue lysate (male)
Lane 2 : APOE knockout mouse brain tissue lysate (male)
Lane 3 : Wild-type mouse liver tissue lysate (male)
Lane 4 : APOE knockout mouse liver tissue lysate (male)
Lane 5 : Wild-type mouse brain tissue lysate (female)
Lane 6 : APOE knockout mouse brain tissue lysate (female)
Lane 7 : Wild-type mouse liver tissue lysate (female)
Lane 8 : APOE knockout mouse liver tissue lysate (female)

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

Predicted band size: 36 kDa
Observed band size: 36 kDa

Exposure time: 4 seconds

The tissue samples were kindly provided by GemPharmatech. C57BL/6JGpt wildtype mice and APOE-KO homozygous mice (Strain ID: T001458).



Western blot - Anti-Apolipoprotein E antibody [EPR19378] (ab183596)

All lanes : Anti-Apolipoprotein E antibody [EPR19378] (ab183596) at 1/5000 dilution

Lane 1 : Mouse plasma
Lane 2 : Mouse liver lysate
Lane 3 : Rat plasma
Lane 4 : Rat liver lysate
Lane 5 : Mouse brain lysate
Lane 6 : Rat brain lysate
Lane 7 : Rat kidney lysate
Lane 8 : Mouse kidney lysate

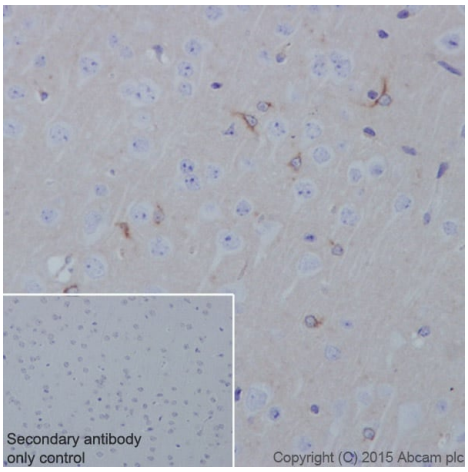
Lysates/proteins at 20 µg per lane.

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

Predicted band size: 36 kDa
Observed band size: 36 kDa

Blocking/Dilution buffer: 5% NFDM/TBST.

Exposure time: Lane 1,2,3 and 4: 4 seconds; Lane 5,6 and 7: 15 seconds; Lane 8: 1 minute.

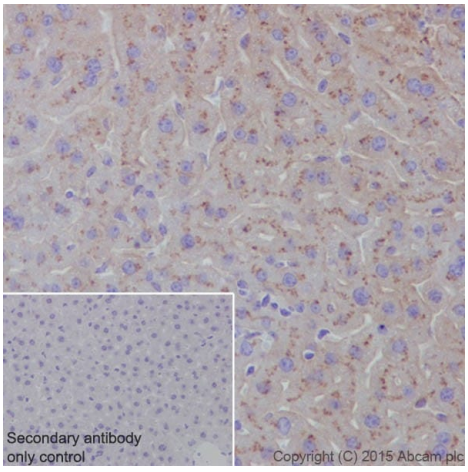


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Apolipoprotein E antibody [EPR19378] (ab183596)

Immunohistochemical analysis of paraffin-embedded Mouse cerebral cortex tissue labeling Apolipoprotein E with ab183596 at 1/4000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (**ab97051**) at 1/500 dilution. Cytoplasm staining on gliocytes of mouse cerebral cortex is observed. Counter stained with Hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is **ab97051** at 1/500 dilution.

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

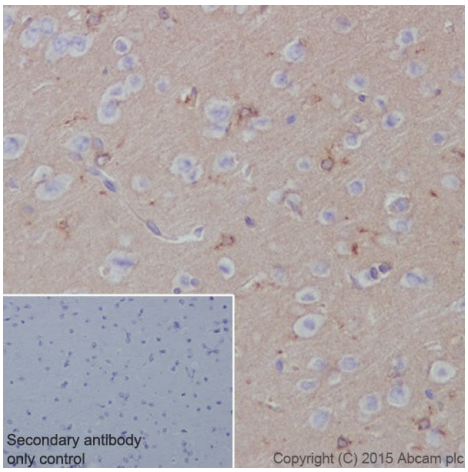


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Apolipoprotein E antibody [EPR19378] (ab183596)

Immunohistochemical analysis of paraffin-embedded Mouse liver tissue labeling Apolipoprotein E with ab183596 at 1/4000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (**ab97051**) at 1/500 dilution. Cytoplasm staining on hepatocytes of mouse liver is observed. Counter stained with Hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is **ab97051** at 1/500 dilution.

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

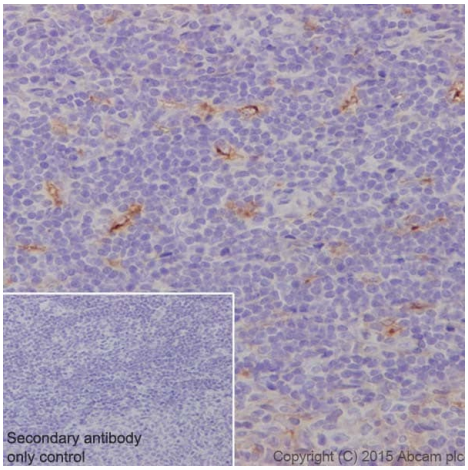


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Apolipoprotein E antibody [EPR19378] (ab183596)

Immunohistochemical analysis of paraffin-embedded Rat cerebral cortex tissue labeling Apolipoprotein E with ab183596 at 1/4000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (**ab97051**) at 1/500 dilution. Cytoplasm staining on gliocytes of rat cerebral cortex is observed. Counter stained with Hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is **ab97051** at 1/500 dilution.

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

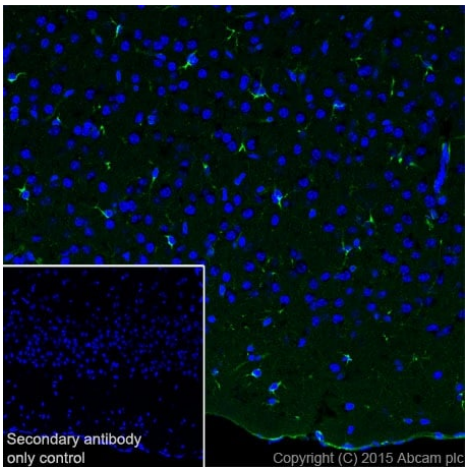


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Apolipoprotein E antibody [EPR19378] (ab183596)

Immunohistochemical analysis of paraffin-embedded Rat spleen tissue labeling Apolipoprotein E with ab183596 at 1/4000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (**ab97051**) at 1/500 dilution. Cytoplasm staining on macrophages of rat spleen is observed. Counter stained with Hematoxylin.

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is **ab97051** at 1/500 dilution.

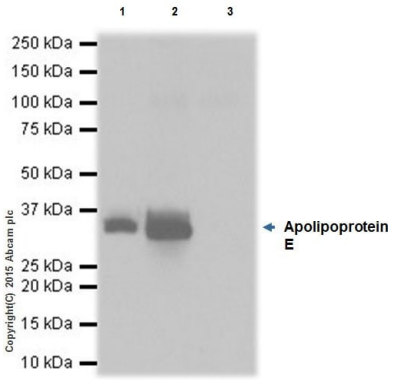
Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Immunohistochemistry (Frozen sections) - Anti-Apolipoprotein E antibody [EPR19378] (ab183596)

Immunohistochemical analysis of 4% paraformaldehyde-fixed, 0.2% Triton X-100 permeabilized frozen Mouse cortex tissue section labeling Apolipoprotein E with ab183596 at 1/500 dilution, followed by AlexaFluor®488 Goat anti-Rabbit secondary (**ab150077**) at 1/1000 dilution. The result showed cytoplasmic staining on mouse cortex. The nuclear counter stain is DAPI (blue).

Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is **ab150077** at 1/1000 dilution.



Immunoprecipitation - Anti-Apolipoprotein E antibody [EPR19378] (ab183596)

Apolipoprotein E was immunoprecipitated from 1mg of Mouse plasma with ab183596 at 1/30 dilution. Western blot was performed from the immunoprecipitate using ab183596 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP) (**ab131366**), was used for detection at 1/10000 dilution.

Lane 1: Mouse plasma, 10µg (Input).

Lane 2: ab183596 IP in Mouse plasma.

Lane 3: Rabbit IgG,monoclonal [EPR25A] - Isotype Control (**ab172730**) instead of ab183596 in Mouse plasma.

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

Exposure time: 1 second.

Anti-Apolipoprotein E antibody [EPR19378]

(ab183596)

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