

**APOE Antibody (C-term) Blocking Peptide**  
**Synthetic peptide**  
**Catalog # BP7587b****Specification**

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**APOE Antibody (C-term) Blocking Peptide - Product Information**Primary Accession [P02649](#)**APOE Antibody (C-term) Blocking Peptide - Additional Information****Gene ID** 348**Other Names**

Apolipoprotein E, Apo-E, APOE

**Target/Specificity**

The synthetic peptide sequence used to generate the antibody [AP7587b](/products/AP7587b) was selected from the C-term region of human APOE. A 10 to 100 fold molar excess to antibody is recommended. Precise conditions should be optimized for a particular assay.

**Format**

Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

**Storage**

Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

**Precautions**

This product is for research use only. Not for use in diagnostic or therapeutic procedures.

**APOE Antibody (C-term) Blocking Peptide - Protein Information****Name** APOE ([HGNC:613](#))**Function**

APOE is an apolipoprotein, a protein associating with lipid particles, that mainly functions in lipoprotein-mediated lipid transport between organs via the plasma and interstitial fluids (PubMed: [6860692](http://www.uniprot.org/citations/6860692), PubMed: [1911868](http://www.uniprot.org/citations/1911868), PubMed: [14754908](http://www.uniprot.org/citations/14754908)). APOE is a core component of plasma lipoproteins and is involved in their production, conversion and clearance (PubMed: [6860692](http://www.uniprot.org/citations/6860692), PubMed: [2762297](http://www.uniprot.org/citations/2762297), PubMed: [1911868](http://www.uniprot.org/citations/1911868), PubMed: [1917954](http://www.uniprot.org/citations/1917954), PubMed: [9395455](http://www.uniprot.org/citations/9395455), PubMed: [14754908](http://www.uniprot.org/citations/14754908)).

target="\_blank">14754908</a>, PubMed:<a href="http://www.uniprot.org/citations/23620513" target="\_blank">23620513</a>). Apolipoproteins are amphipathic molecules that interact both with lipids of the lipoprotein particle core and the aqueous environment of the plasma (PubMed:<a href="http://www.uniprot.org/citations/6860692" target="\_blank">6860692</a>, PubMed:<a href="http://www.uniprot.org/citations/2762297" target="\_blank">2762297</a>, PubMed:<a href="http://www.uniprot.org/citations/9395455" target="\_blank">9395455</a>). As such, APOE associates with chylomicrons, chylomicron remnants, very low density lipoproteins (VLDL) and intermediate density lipoproteins (IDL) but shows a preferential binding to high-density lipoproteins (HDL) (PubMed:<a href="http://www.uniprot.org/citations/6860692" target="\_blank">6860692</a>, PubMed:<a href="http://www.uniprot.org/citations/1911868" target="\_blank">1911868</a>). It also binds a wide range of cellular receptors including the LDL receptor/LDLR, the LDL receptor-related proteins LRP1, LRP2 and LRP8 and the very low-density lipoprotein receptor/VLDLR that mediate the cellular uptake of the APOE-containing lipoprotein particles (PubMed:<a href="http://www.uniprot.org/citations/2762297" target="\_blank">2762297</a>, PubMed:<a href="http://www.uniprot.org/citations/1917954" target="\_blank">1917954</a>, PubMed:<a href="http://www.uniprot.org/citations/7768901" target="\_blank">7768901</a>, PubMed:<a href="http://www.uniprot.org/citations/8939961" target="\_blank">8939961</a>, PubMed:<a href="http://www.uniprot.org/citations/12950167" target="\_blank">12950167</a>, PubMed:<a href="http://www.uniprot.org/citations/20030366" target="\_blank">20030366</a>, PubMed:<a href="http://www.uniprot.org/citations/2063194" target="\_blank">2063194</a>, PubMed:<a href="http://www.uniprot.org/citations/8756331" target="\_blank">8756331</a>, PubMed:<a href="http://www.uniprot.org/citations/20303980" target="\_blank">20303980</a>, PubMed:<a href="http://www.uniprot.org/citations/1530612" target="\_blank">1530612</a>, PubMed:<a href="http://www.uniprot.org/citations/7635945" target="\_blank">7635945</a>). Finally, APOE has also a heparin-binding activity and binds heparan- sulfate proteoglycans on the surface of cells, a property that supports the capture and the receptor-mediated uptake of APOE-containing lipoproteins by cells (PubMed:<a href="http://www.uniprot.org/citations/9395455" target="\_blank">9395455</a>, PubMed:<a href="http://www.uniprot.org/citations/9488694" target="\_blank">9488694</a>, PubMed:<a href="http://www.uniprot.org/citations/23676495" target="\_blank">23676495</a>, PubMed:<a href="http://www.uniprot.org/citations/7635945" target="\_blank">7635945</a>). A main function of APOE is to mediate lipoprotein clearance through the uptake of chylomicrons, VLDLs, and HDLs by hepatocytes (PubMed:<a href="http://www.uniprot.org/citations/1911868" target="\_blank">1911868</a>, PubMed:<a href="http://www.uniprot.org/citations/1917954" target="\_blank">1917954</a>, PubMed:<a href="http://www.uniprot.org/citations/9395455" target="\_blank">9395455</a>, PubMed:<a href="http://www.uniprot.org/citations/23676495" target="\_blank">23676495</a>, PubMed:<a href="http://www.uniprot.org/citations/29516132" target="\_blank">29516132</a>). APOE is also involved in the biosynthesis by the liver of VLDLs as well as their uptake by peripheral tissues ensuring the delivery of triglycerides and energy storage in muscle, heart and adipose tissues (PubMed:<a href="http://www.uniprot.org/citations/2762297" target="\_blank">2762297</a>, PubMed:<a href="http://www.uniprot.org/citations/29516132" target="\_blank">29516132</a>). By participating in the lipoprotein-mediated distribution of lipids among tissues, APOE plays a critical role in plasma and tissues lipid homeostasis (PubMed:<a href="http://www.uniprot.org/citations/2762297" target="\_blank">2762297</a>, PubMed:<a href="http://www.uniprot.org/citations/1917954" target="\_blank">1917954</a>, PubMed:<a href="http://www.uniprot.org/citations/29516132" target="\_blank">29516132</a>). APOE is also involved in two steps of reverse cholesterol transport, the HDLs-mediated transport of cholesterol from peripheral tissues to the liver, and thereby plays an important role in cholesterol homeostasis (PubMed:<a href="http://www.uniprot.org/citations/9395455" target="\_blank">9395455</a>, PubMed:<a href="http://www.uniprot.org/citations/14754908" target="\_blank">14754908</a>, PubMed:<a href="http://www.uniprot.org/citations/23620513" target="\_blank">23620513</a>). First, it is functionally associated with ABCA1 in the biogenesis of HDLs in tissues (PubMed:<a href="http://www.uniprot.org/citations/14754908" target="\_blank">14754908</a>, PubMed:<a href="http://www.uniprot.org/citations/23620513" target="\_blank">23620513</a>). Second, it is enriched in circulating HDLs and mediates their uptake by hepatocytes (PubMed:<a href="http://www.uniprot.org/citations/9395455" target="\_blank">9395455</a>). APOE also

plays an important role in lipid transport in the central nervous system, regulating neuron survival and sprouting (PubMed:<a href="http://www.uniprot.org/citations/8939961" target="\_blank">8939961</a>, PubMed:<a href="http://www.uniprot.org/citations/25173806" target="\_blank">25173806</a>). APOE is also involved in innate and adaptive immune responses, controlling for instance the survival of myeloid-derived suppressor cells (By similarity). Binds to the immune cell receptor LILRB4 (PubMed:<a href="http://www.uniprot.org/citations/30333625" target="\_blank">30333625</a>). APOE may also play a role in transcription regulation through a receptor-dependent and cholesterol-independent mechanism, that activates MAP3K12 and a non-canonical MAPK signal transduction pathway that results in enhanced AP-1-mediated transcription of APP (PubMed:<a href="http://www.uniprot.org/citations/28111074" target="\_blank">28111074</a>).

### **Cellular Location**

Secreted. Secreted, extracellular space. Secreted, extracellular space, extracellular matrix. Extracellular vesicle. Endosome, multivesicular body. Note=In the plasma, APOE is associated with chylomicrons, chylomicrons remnants, VLDL, LDL and HDL lipoproteins (PubMed:1911868, PubMed:8340399). Lipid poor oligomeric APOE is associated with the extracellular matrix in a calcium- and heparan-sulfate proteoglycans-dependent manner (PubMed:9488694) Lipidation induces the release from the extracellular matrix (PubMed:9488694). Colocalizes with CD63 and PMEL at exosomes and in intraluminal vesicles within multivesicular endosomes

### **Tissue Location**

Produced by several tissues and cell types and mainly found associated with lipid particles in the plasma, the interstitial fluid and lymph (PubMed:25173806). Mainly synthesized by liver hepatocytes (PubMed:25173806). Significant quantities are also produced in brain, mainly by astrocytes and glial cells in the cerebral cortex, but also by neurons in frontal cortex and hippocampus (PubMed:3115992, PubMed:10027417). It is also expressed by cells of the peripheral nervous system (PubMed:10027417, PubMed:25173806). Also expressed by adrenal gland, testis, ovary, skin, kidney, spleen and adipose tissue and macrophages in various tissues (PubMed:25173806)

## **APOE Antibody (C-term) Blocking Peptide - Protocols**

Provided below are standard protocols that you may find useful for product applications.

- [Blocking Peptides](#)

## **APOE Antibody (C-term) Blocking Peptide - Images**

## **APOE Antibody (C-term) Blocking Peptide - Background**

Chylomicron remnants and very low density lipoprotein (VLDL) remnants are rapidly removed from the circulation by receptor-mediated endocytosis in the liver. Apolipoprotein E, a main apoprotein of the chylomicron, binds to a specific receptor on liver cells and peripheral cells. ApoE is essential for the normal catabolism of triglyceride-rich lipoprotein constituents. The APOE gene is mapped to chromosome 19 in a cluster with APOC1 and APOC2. Defects in apolipoprotein E result in familial dysbetalipoproteinemia, or type III hyperlipoproteinemia (HLP III), in which increased plasma cholesterol and triglycerides are the consequence of impaired clearance of chylomicron and VLDL remnants.

## **APOE Antibody (C-term) Blocking Peptide - References**

Wood,K.C., Appl Physiol Nutr Metab 33 (4), 761-768 (2008)Pemberton,L., (er) HIV Med. (2008) In pressSundermann,E.E., (er) Horm Behav (2008) In pressChristensen,H.,(er) BMC Geriatr 8, 14 (2008)