# Anti-Human ApoE (Pan) [Clone APOE-2B9] — Purified No Carrier Protein

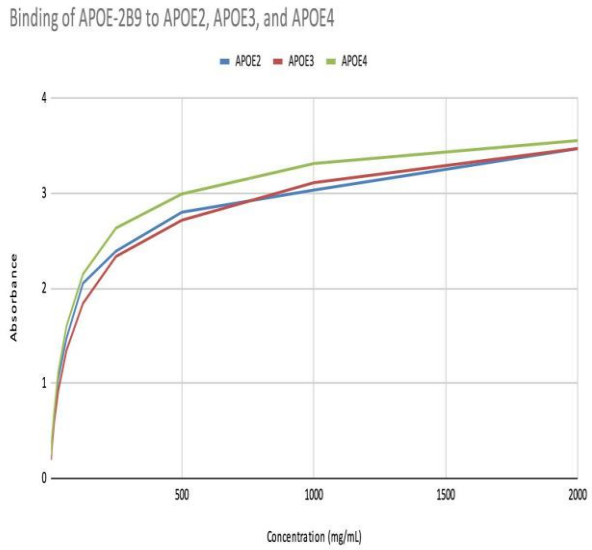
## Recombinant Monoclonal Antibody

## Product Information

**Product No.:** A458

**Clone:** ApoE-2B9

**Isotype:** Rabbit IgG κ




## Product Description

**Specificity:**
Clone ApoE-2B9 binds to all three isoforms (E2, E3, and E4) of human apolipoprotein E (ApoE).

**Antigen Distribution:**
ApoE is produced differentially in the central nervous system by astrocytes and microglia as well as peripherally by the liver and macrophages. ApoE does not cross the blood–brain barrier.

**Background:**
ApoE is a 299-amino acid multifunctional protein primarily synthesized in the liver, but also produced by other tissues including the brain. It is a major component of several classes of lipoproteins, including chylomicron remnants, very low-density lipoproteins (VLDL), intermediate-density lipoproteins (IDL), and some high-density lipoproteins (HDL)[1]. It plays a crucial role in lipid

metabolism and has significant implications for various diseases, particularly neurodegenerative disorders[1].

The primary function of ApoE is to mediate the binding of lipoproteins to specific cell-surface receptors, particularly the low-density lipoprotein receptor (LDLR). This interaction is essential for the normal processing and catabolism of triglyceride-rich lipoproteins[1]. In the central nervous system, ApoE is mainly produced by astrocytes and plays a crucial role in transporting cholesterol to neurons via ApoE receptors[1].

There are three major isoforms of ApoE in humans: ApoE2, ApoE3, and ApoE4. These isoforms differ by only one or two amino acids at positions 112 and 158, but these small differences have significant impacts on their structure and function[1].

The ApoE genotype has been strongly associated with various diseases:

1. Alzheimer's Disease: The ApoE4 isoform is the strongest genetic risk factor for late-onset Alzheimer's disease. Individuals carrying one copy of the ApoE4 allele have a 3-4 fold increased risk, while those with two copies have a 12-15 fold increased risk[1].

2. Cardiovascular Disease: ApoE plays a role in atherosclerosis and cardiovascular disease risk. The ApoE4 isoform is associated with higher levels of LDL cholesterol and increased risk of coronary heart disease[1].

3. Lipid Disorders: The ApoE2 isoform is associated with type III hyperlipoproteinemia, a rare lipid disorder characterized by elevated levels of cholesterol and triglycerides.

4. Other Neurological Conditions: ApoE has been implicated in other neurological disorders, including Parkinson's disease, multiple sclerosis, and traumatic brain injury[1].

The mechanisms by which ApoE influences disease risk are complex and not fully understood. In Alzheimer's disease, for example, ApoE4 is thought to affect amyloid-β aggregation and clearance, tau phosphorylation, neuroinflammation, and synaptic plasticity[1].

**Known Reactivity Species:**
Human

**Expression Host:**
HEK-293 Cells

**Format:**
Purified No Carrier Protein

**Immunogen:**
Recombinant Human ApoE protein

Products are for research use only. Not for use in diagnostic or therapeutic procedures.

## Formulation
This recombinant monoclonal antibody is aseptically packaged and formulated in 0.01 M phosphate buffered saline (150 mM NaCl) PBS pH 7.2 - 7.4 with no carrier protein, potassium, calcium or preservatives added. Due to inherent biochemical properties of antibodies, certain products may be prone to precipitation over time. Precipitation may be removed by aseptic centrifugation and/or filtration.

## Purity
≥90% monomer by analytical SEC and SDS-Page

## Storage and Stability
Antibodies may be stored sterile as received at 2-8°C for up to one year. For longer term storage, aseptically aliquot in working volumes without diluting and store at ≥ -80°C. **Avoid Repeated Freeze Thaw Cycles.**

## Product Preparation
Recombinant antibodies are manufactured in an animal free facility using only *in vitro* protein free cell culture techniques and are purified by a multi-step process including the use of protein A or G to assure extremely low levels of endotoxins, leachable protein A or aggregates.

## Applications
**Applications and Recommended Usage (Quality Tested By Leinco):**

**ELISA WB**

## Country of Origin
USA

## References
1. Huang Y, Mahley RW.Neurobiol Dis. 2014 Dec;72 Pt A:3-12.

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