

### Human Apolipoprotein E (ApoE) Proteins

<input type="checkbox"/> Cat. # APOE15-R	Human Purified native plasma ApoE protein	<b>SIZE:</b> 25 ug
<input type="checkbox"/> Cat. # APOE25-R	Recombinant Purified Human ApoE2 protein	<b>SIZE:</b> 25 ug
<input type="checkbox"/> Cat. # APOE35-R	Recombinant Purified Human ApoE3 protein	<b>SIZE:</b> 25 ug
<input type="checkbox"/> Cat. # APOE45-R	Recombinant Purified Human ApoE4 protein	<b>SIZE:</b> 25 ug

**Apolipoprotein E (apo E)**, a component of lipoproteins produced by the liver and in circulating macrophages, plays a critical role in the reverse transport of cholesterol to the liver via the circulation. ApoE is also expressed in the brain and in response to injury in both the peripheral and central nervous systems. **ApoE** is a single polypeptide chain of 299 amino acids (~34 kDa) consisting of two independently folded functional domains. The C-terminal domain contains the major lipid-binding region. The N-terminal domain exists in the lipid-free state as a four-helix bundle of amphipathic  $\alpha$ -helices and contains the LDLR-binding region (amino acids 136–150 in helix), which coincides with a heparin-binding site. Humans and mice lacking apoE cannot clear remnant lipoproteins from the plasma and are at increased risk for atherosclerosis. ApoE is a high-affinity ligand for the low density lipoprotein receptor (LDLR) family and for cell-surface heparan sulfate proteoglycans. Defective binding of apoE to receptors causes cholesterol-rich lipoprotein particles to accumulate in the plasma and is the mechanism of type III hyperlipoproteinemia, a genetic disorder characterized by elevated plasma cholesterol and triglyceride levels and accelerated coronary artery disease. In humans, apoE has three major isoforms: **Apo E2** (Cys112, Cys158), **Apo E3** (Cys112, Arg158), **Apo E4** (Arg112, Arg158), products of alleles at a single gene locus. Although apoE4 is neither necessary nor sufficient to cause AD, inheritance of apoE4 is a significant risk factor for late onset AD, decreasing the age of onset and the duration of disease. Due primarily to this genetic linkage, the role of apoE in the pathogenesis AD is being actively studied.

#### Source of Protein

Cat. # APOE15-R

**Human Plasma Apo E:** A component of VLDL and subclass of HDL. Prepared from plasma that has been shown by certified tests to be negative for HBsAg and for antibodies to HIV and HCV. (Mol Wt: 34.2 kD, >95% purity). Protein is supplied in PBS, pH 7.4 (Lot sp concn is provided on the vial).

Cat. # APOE25-R

**Recombinant Apo E, Isoform E2:** Isoform bearing cysteine amino acids 112 and 158, binds to beta-amyloid protein but not to LDL receptor. (Mol. wt 34kD, >95% purity). Protein is supplied in 100 mM NH<sub>4</sub>CO<sub>3</sub> buffer at 0.32 mg/ml or 32 ug/100 ul (Lot sp concn is provided on the vial).

Cat. # APOE35-R

**Recombinant Apo E, Isoform E3:** It is produced by expression in a baculovirus insect cell culture. Apo E3

competes with human LDL for binding to the human Apo B/E (LDL) receptor. (Mol wt: 34kD, >95% purity). Protein is supplied in 100 mM NH<sub>4</sub>CO<sub>3</sub> buffer at 0.32 mg/ml or 32 ug/100 ul (Lot sp concn is provided on the vial).

Cat. # APOE45-R

**Recombinant Apo E, Isoform E4:** It is expressed in a baculovirus insect cell culture system. Apo E4 competes with human LDL for binding to the human Apo B/E (LDL) receptor. Apo E4 has been implicated as a risk factor in the development of coronary heart disease and Alzheimer's disease. (Mol wt: 34kD, >95% purity). APOE25-R-25 is supplied in 100 mM NH<sub>4</sub>CO<sub>3</sub> buffer at 0.32 mg/ml or 32 ug/100 ul (Lot sp concn is provided on the vial).

**Storage:** Deep freeze (-70 C). Avoid freeze/ thaw cycles. Avoid storage at +4C. This product is stable for 2 years as supplied.

**Solubility:** Aqueous solutions. Due to self-association common to amphipathic apoproteins, there may be no free monomer at concentrations above 1mg/ml. Apolipoproteins exists as monomers in buffers containing 5M guanidine HCl or 6M urea.

#### General References:

Strittmatter, W. J et al (1993) PNAS 90, 8098; Gretch, D. G et al (1991) PNAS 88, 8530; Corder, E.H et al (1993) PNAS 90, 8098; Kelly, M. E et al (1994) Cell Immunol. 159, 124; Mahley, R.W (1998) Science 240, 622.

\*This product is for In vitro research use only.

#### Related material available from ADI

Catalog# Prod Description

APOE11-C Recombinant Human ApoE protein W. Blot +ve control  
 APOE11-S Anti-Human ApoE protein antiserum #1  
 APOE12-C Recombinant Human ApoE protein W. Blot +ve control  
 APOE12-M Monoclonal Anti-Human ApoE protein IgG #2  
 APOE15-R Human Purified native plasma Apolipoprotein E protein  
 APOE25-R Recombinant (E. coli) Purified Human Apolipoprotein E2 protein  
 APOE31-C Human ApoE3 protein W. Blot +ve control  
 APOE31-S Anti-Human ApoE3 protein antiserum #1  
 APOE35-R Recombinant Purified Human Apolipoprotein E3 protein  
 APOE36-R Recombinant (E coli) Purified Human Apolipoprotein E3 protein  
 APOE45-R Recombinant Purified Human Apolipoprotein E4 protein  
 APOE13-A Anti-Human Plasma Apolipoprotein E (ApoE) IgG, aff pure  
 APOE13-C Human plasma Apolipoprotein E protein control for WB

APOE15-45-R

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