

#### DESCRIPTION

|                           |                                                                                                                                                                                                                                                                             |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Species Reactivity</b> | Human                                                                                                                                                                                                                                                                       |
| <b>Specificity</b>        | Detects human Apolipoprotein E/ApoE protein in direct ELISAs.                                                                                                                                                                                                               |
| <b>Source</b>             | Monoclonal Mouse IgG <sub>2A</sub> Clone # 377109                                                                                                                                                                                                                           |
| <b>Purification</b>       | Protein A or G purified from hybridoma culture supernatant                                                                                                                                                                                                                  |
| <b>Immunogen</b>          | <i>E. coli</i> -derived human Apolipoprotein E/ApoE protein<br>Lys19-His317<br>Accession # P02649                                                                                                                                                                           |
| <b>Conjugate</b>          | Alexa Fluor 532<br>Excitation Wavelength: 534 nm<br>Emission Wavelength: 553 nm                                                                                                                                                                                             |
| <b>Formulation</b>        | Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide<br><br>*Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions. |

#### APPLICATIONS

**Please Note:** Optimal dilutions should be determined by each laboratory for each application. [General Protocols](#) are available in the Technical Information section on our website.

**ELISA** Optimal dilution of this antibody should be experimentally determined.

#### PREPARATION AND STORAGE

|                                |                                                                                                                   |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------|
| <b>Shipping</b>                | The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below. |
| <b>Stability &amp; Storage</b> | Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied                          |

#### BACKGROUND

ApoE is a major protein component of serum LDL, VLDL, HDL, and chylomicrons. It is produced predominantly by hepatocytes, macrophages, and non-neuronal cells in the CNS. ApoE-containing particles transport triglycerides and cholesterol to peripheral tissues for cellular uptake and catabolism (1 - 4). Mature human ApoE is a 34 kDa glycoprotein that consists of an N-terminal domain composed of four bundled  $\alpha$ -helices, plus a hinge region and an extended  $\alpha$ -helical C-terminal domain (2, 5). Its amphipathic nature and flexible structure enables it to adopt dramatically different conformations upon lipid association (2). ApoE is monomeric in lipid particles, although it forms oligomers when lipid-free (6). ApoE3 is the most abundant of the three common alleles in human; ApoE2 and ApoE4 differ by single aa substitutions (1). Mature human ApoE shares 71% aa sequence identity with mouse and rat ApoE. LDL receptor family proteins preferentially bind and internalize the lipid-bound form of ApoE with the exception of VLDLR which also efficiently internalizes lipid-free ApoE (7, 8). Lipoprotein uptake is facilitated by the initial binding of ApoE to cell surface heparan sulfate proteoglycans (HSPG) (9). Receptor/HSPG binding and lipid interactions primarily involve the N- and C-terminal regions of ApoE, respectively (2). Recycled lipid-free ApoE is formed into HDL particles through interactions with the lipid transporter ABCA1 (10). High cellular sterol content activates the nuclear hormone receptor LXR which promotes increased ApoE synthesis and increased sterol efflux, while low sterol content induces LDL R expression with increased sterol uptake and decreased ApoE production (11). ApoE3 dampens the TNF- $\alpha$  induced inflammatory response in vascular endothelial cells (12). In the CNS, ApoE blocks production of the amyloid A $\beta$  peptide by inhibiting the  $\gamma$ -secretase cleavage of APP (13). It also complexes with A $\beta$  and promotes A $\beta$  internalization via LRP2 (14, 15).

#### PRODUCT SPECIFIC NOTICES

This product is provided under an agreement between Life Technologies Corporation and R&D Systems, Inc., and the manufacture, use, sale or import of this product is subject to one or more US patents and corresponding non-US equivalents, owned by Life Technologies Corporation and its affiliates. The purchase of this product conveys to the buyer the non-transferable right to use the purchased amount of the product and components of the product only in research conducted by the buyer (whether the buyer is an academic or for-profit entity). The sale of this product is expressly conditioned on the buyer not using the product or its components (1) in manufacturing; (2) to provide a service, information, or data to an unaffiliated third party for payment; (3) for therapeutic, diagnostic or prophylactic purposes; (4) to resell, sell, or otherwise transfer this product or its components to any third party, or for any other commercial purpose. Life Technologies Corporation will not assert a claim against the buyer of the infringement of the above patents based on the manufacture, use or sale of a commercial product developed in research by the buyer in which this product or its components was employed, provided that neither this product nor any of its components was used in the manufacture of such product. For information on purchasing a license to this product for purposes other than research, contact Life Technologies Corporation, Cell Analysis Business Unit, Business Development, 29851 Willow Creek Road, Eugene, OR 97402, Tel: (541) 465-8300. Fax: (541) 335-0354.