

apoE (A1.4): sc-13521

BACKGROUND

Apolipoprotein-E (apoE) is a protein component of plasma lipoproteins that mediates the binding, internalization and catabolism of lipoprotein particles. It can serve as a ligand for several lipoprotein receptors, including the LDL (apoB/E) receptor and the hepatic apoE (chylomicron remnant) receptor. apoE is produced in most organs and occurs in all plasma lipoprotein fractions, constituting 10-20% of VLDL (very low density lipoprotein) and 1-2% of HDL (high density lipoprotein). Three major isoforms of apoE have been described in human (E2, E3 and E4) which differ by only one or two amino acids. Estrogen receptor has been shown to upregulate apoE gene expression via the ER-mediated pathway, indicating a potential role for apoE in atherosclerosis. This is consistent with studies in mice in which plasma apoE levels were raised, thereby protecting the mice from diet-induced atherosclerosis. apoE has also been shown to be a potent inhibitor of proliferation and thus may play a role in angiogenesis, tumor cell growth and metastasis.

CHROMOSOMAL LOCATION

Genetic locus: APOE (human) mapping to 19q13.32.

SOURCE

apoE (A1.4) is a mouse monoclonal antibody raised against amino acids 126-191 of apoE of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

apoE (A1.4) is available conjugated to agarose (sc-13521 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-13521 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-13521 PE), fluorescein (sc-13521 FITC), Alexa Fluor® 488 (sc-13521 AF488), Alexa Fluor® 546 (sc-13521 AF546), Alexa Fluor® 594 (sc-13521 AF594) or Alexa Fluor® 647 (sc-13521 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-13521 AF680) or Alexa Fluor® 790 (sc-13521 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

apoE (A1.4) is recommended for detection of apoE of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for apoE siRNA (h): sc-29708, apoE shRNA Plasmid (h): sc-29708-SH and apoE shRNA (h) Lentiviral Particles: sc-29708-V.

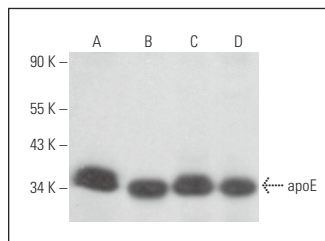
Molecular Weight of apoE: 36 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, human liver extract: sc-363766 or human kidney extract: sc-363764.

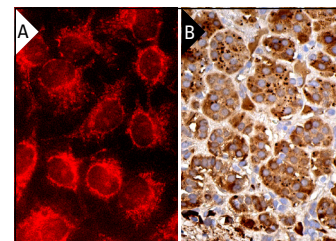
STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



apoE (A1.4): sc-13521. Western blot analysis of apoE expression in Hep G2 whole cell lysate (A) and human liver (B), human fetal liver (C) and human kidney (D) tissue extracts.



apoE (A1.4): sc-13521. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human adrenal gland tissue showing cytoplasmic staining of glandular cells (B).

SELECT PRODUCT CITATIONS

- Choe, L.H., et al. 2002. Apolipoprotein E and other cerebrospinal fluid proteins differentiate ante mortem variant Creutzfeldt-Jakob disease from ante mortem sporadic Creutzfeldt-Jakob disease. *Electrophoresis* 23: 2242-2246.
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- Lara, S., et al. 2017. Identification of receptor binding to the biomolecular corona of nanoparticles. *ACS Nano* 11: 1884-1893.
- Yang, X., et al. 2018. Apolipoprotein E deficiency exacerbates spinal cord injury in mice: inflammatory response and oxidative stress mediated by NFκB signaling pathway. *Front. Cell. Neurosci.* 12: 142.
- Jia, H., et al. 2019. Perilipin 5 promotes hepatic steatosis in dairy cows through increasing lipid synthesis and decreasing very low density lipoprotein assembly. *J. Dairy Sci.* 102: 833-845.
- Chen, D., et al. 2020. The lipid elongation enzyme ELOVL2 is a molecular regulator of aging in the retina. *Aging Cell* 19: e13100.
- Wang, B., et al. 2021. Hepatitis C virus induces oxidation and degradation of apolipoprotein B to enhance lipid accumulation and promote viral production. *PLoS Pathog.* 17: e1009889.
- Kang, S.J., et al. 2022. Neuronal apoE regulates the cell-to-cell transmission of α-synuclein. *Int. J. Mol. Sci.* 23: 8311.
- Rueter, J., et al. 2023. The mitochondrial BCKD complex interacts with hepatic apolipoprotein E in cultured cells *in vitro* and mouse livers *in vivo*. *Cell. Mol. Life Sci.* 80: 59.

RESEARCH USE

For research use only, not for use in diagnostic procedures.