

apoC-III (8H7): sc-293227

BACKGROUND

Apolipoproteins are protein components of plasma lipoproteins. The apolipoprotein C gene family encodes four homologous proteins designated apoC-I to -IV, which specifically modulate the metabolism of triglyceride-rich lipoproteins. The human apoC-I gene maps to chromosome 19q13.2 and is expressed primarily in the liver where it is activated when monocytes differentiate into macrophages. The human apoC-II gene maps to chromosome 19q13.2 and encodes a 79 amino acid single chain protein that is a necessary cofactor for the activation of lipoprotein lipase, the enzyme that hydrolyzes triglycerides in plasma and transfers the fatty acids to tissues. The human apoC-III gene maps to chromosome 11q23.3 and encodes a protein that may delay catabolism of triglyceride-rich particles by inhibiting lipoprotein lipase and hepatic lipase. The human apoC-IV gene maps to chromosome 19q13.2 and encodes a 127 amino acid protein that is primarily expressed in the liver.

REFERENCES

1. Breckenridge, W.C., et al. 1978. Hypertriglyceridemia associated with deficiency of apolipoprotein C-II. *N. Engl. J. Med.* 298: 1265-1273.
2. Allan, C.M., et al. 1995. Identification and characterization of a new human gene (APOC4) in the apolipoprotein E, C-I, and C-II gene locus. *Genomics* 28: 291-300.
3. Zhang, L.H., et al. 1996. Identification, characterization, cloning, and expression of apolipoprotein C-IV, a novel sialoglycoprotein of rabbit plasma lipoproteins. *J. Biol. Chem.* 271: 1776-1783.
4. Dang, Q. and Taylor, J. 1996. *In vivo* footprinting analysis of the hepatic control region of the human apolipoprotein E/C-I/C-IV/C-II gene locus. *J. Biol. Chem.* 271: 28667-28676.
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6. Online Mendelian Inheritance in Man, OMIM™. 1998. Johns Hopkins University, Baltimore, MD. MIM Number: 207750. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
7. Jong, M.C. and Havekes, L.M. 2000. Insights into apolipoprotein C metabolism from transgenic and gene-targeted mice. *Int. J. Tissue React.* 22: 59-66.
8. Mak, P.A., et al. 2002. Regulated expression of the apolipoprotein E/C-I/C-IV/C-II gene cluster in murine and human macrophages. A critical role for nuclear liver X receptors α and β . *J. Biol. Chem.* 277: 31900-31908.

CHROMOSOMAL LOCATION

Genetic locus: APOC3 (human) mapping to 11q23.3.

SOURCE

apoC-III (8H7) is a mouse monoclonal antibody raised against amino acids 21-99 of apoC-III of human origin.

RESEARCH USE

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

PRODUCT

Each vial contains 100 μ g IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

apoC-III (8H7) is recommended for detection of apoC-III of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

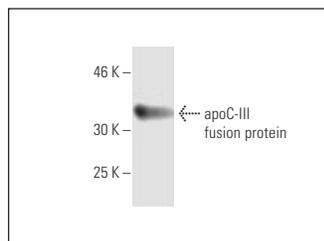
Suitable for use as control antibody for apoC-III siRNA (h): sc-41186, apoC-III shRNA Plasmid (h): sc-41186-SH and apoC-III shRNA (h) Lentiviral Particles: sc-41186-V.

Molecular Weight of apoC-III: 10 kDa.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



apoC-III (8H7): sc-293227. Western blot analysis of human recombinant apoC-III fusion protein.

SELECT PRODUCT CITATIONS

1. Jayaraman, S., et al. 2020. Binding to heparin triggers deleterious structural and biochemical changes in human low-density lipoprotein, which are amplified in hyperglycemia. *Biochim. Biophys. Acta Mol. Cell Biol. Lipids* 1865: 158712.
2. Wang, X., et al. 2021. Receptor-mediated ER export of lipoproteins controls lipid homeostasis in mice and humans. *Cell Metab.* 33: 350-366.e7.

STORAGE

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