

Product Information



ACAT-2 Blocking Peptide

Catalog No. 10005091

Atherosclerotic plaques contain high levels of cholesterol esters. Under normal conditions intracellular cholesterol esters accumulate into lipid droplets for transport or storage. Acyl-coenzyme A: cholesterol acyltransferase-2 (ACAT-2) catalyzes the formation of cholesterol esters from cholesterol and long chain fatty acyl-coenzyme A. This enzyme has seven putative transmembrane domains with its catalytic site oriented inside the endoplasmic reticulum.^{1,2} ACAT-2 is associated with lipoprotein particle secretion and thus plays an important role in the metabolism of triglyceride-rich lipoproteins like ApoB100.^{1,3,4} In humans, ACAT-2 is primarily expressed in the small intestine, whereas in other mammals, the enzyme is expressed in the liver and the small intestine.^{4,5} Human ACAT-2 has 522 amino acids with an estimated molecular weight of 60 kDa.⁶ Cayman's affinity-purified antibody detects ACAT-2 at about 60 kDa in murine liver, intestine, and fibroblasts.²

Laboratory Procedures

This vial contains 200 µg peptide in 200 µl TBS, pH 7.4, containing 0.1% BSA and 0.02% sodium azide. The ACAT-2 blocking peptide (human ACAT-2 amino acids 3-20) can be used in conjunction with Cayman's ACAT-2 Polyclonal Antibody (Catalog No. 100027) to block protein-antibody complex formation during immunochemical analysis of ACAT-2.

Reconstitute the lyophilized peptide with 200 µl of PBS or distilled water. Store this peptide solution at -20°C. It will be stable for at least two years. To block antibody/protein complex formation, the following procedure is recommended:

1. Mix the ACAT-2 Polyclonal Antibody (Catalog No. 100027) and blocking peptide together in a 1:1 (v/v) ratio in a microfuge tube. For example, mix 20 µl of antibody and 20 µl of peptide.*
2. Incubate for 1 hour at room temperature with occasional mixing prior to further dilution and application of the mixture to the immunoblot.
3. Dilute the mixture to the final working antibody concentration and apply to the slide or membrane as usual.

*This is a recommended mixture. The minimum amount of peptide needed for complete blocking has not been precisely determined and may vary depending on the sample being analyzed. The amount of peptide required may need to be increased if sufficient blocking does not occur.

References

1. Lee, R.G., Willingham, M.C., Davis, M.A., *et al.* Differential expression of ACAT1 and ACAT2 among cells within liver, intestine, kidney, and adrenal of nonhuman primates. *J. Lipid Res.* **41**, 1991-2001 (2000).
2. Anderson, R.A., Joyce, C., Davis, M., *et al.* Identification of a form of acyl-CoA: cholesterol acyltransferase specific to liver and intestine in nonhuman primates. *J. Biol. Chem.* **273**(41), 26747-26754 (1998).
3. Rudel, L.L., Lee, R.G., and Cockman, T.L. Acyl coenzyme A: cholesterol acyltransferase types 1 and 2: structure and function in atherosclerosis. *Curr. Opin. Lipidol.* **12**, 121-127 (2001).
4. Katsuren, K., Tamura, T., Arashiro, R., *et al.* Structure of the human acyl-CoA: cholesterol acyltransferase-2 (ACAT-2) gene and its relation to dyslipidemia. *Biochim. Biophys. Acta* **1531**, 230-240 (2001).
5. Cases, S., Novak, S., Zheng, Y.-W., *et al.* ACAT-2, a second mammalian acyl-CoA: cholesterol acyltransferase. Its cloning, expression, and characterization. *J. Biol. Chem.* **273**(4), 26755-26764 (1998).
6. Oelkers, P., Behari, A., Cromley, D., *et al.* Characterization of two human genes encoding acyl coenzyme A: cholesterol acyltransferase-related enzymes. *J. Biol. Chem.* **273**(41), 26765-26771 (1998).

Related Product

ACAT-2 Polyclonal Antibody - Cat. No. 100027

WARNING: THIS PRODUCT IS NOT INTENDED OR APPROVED FOR HUMAN OR VETERINARY USE. USE OF THIS PRODUCT FOR HUMAN OR ANIMAL TESTING IS EXTREMELY HAZARDOUS AND MAY RESULT IN DISEASE, SEVERE INJURY, OR DEATH.

MATERIAL SAFETY DATA

This material should be considered hazardous until information to the contrary becomes available. Do not ingest, swallow, or inhale. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. This information contains some, but not all, of the information required for the safe and proper use of this material. Before use, the user must review the complete Material Safety Data Sheet, which has been sent under separate cover to the MSDS supervisor at your institution.

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