Product Information

ACAT-1 Blocking Peptide

Catalog No. 10005090

Acyl-coenzyme A: cholesterol acyltransferase-1 (ACAT-1) catalyzes the formation of cholesterol esters from cholesterol and long chain fatty acyl-coenzyme A. ACAT-1 may be involved in maintaining appropriate membrane free cholesterol levels and in lipid droplet formation, and thus play a role in the development of atherosclerosis.[1,2] ACAT-1 is ubiquitously expressed, with highest levels observed in sebaceous glands, steroidogenic tissues, and macrophages.[3-5] This intracellular enzyme is located at the endoplasmic reticulum and has as many as eight transmembrane domains.[1] Human ACAT-1 has 550 amino acids with an estimated molecular weight of 65 kDa.[5] Cayman's affinity purified antibody recognizes a 50 kDa band in most cultured cell lines as reported in the literature.[4,6,7] In addition, the antibody reacts with a native form of ACAT-1 at about 65 kDa in liver tissues.

Laboratory Procedures

This vial contains 200 µg peptide in 200 µl TBS, pH 7.4, containing 0.1% BSA and 0.02% sodium azide. Store aliquots at -20°C; they will be good for up to two years. The ACAT-1 blocking peptide (human ACAT-1 amino acids 6-23) can be used in conjunction with Cayman's ACAT-1 Polyclonal Antibody (Catalog No. 100028) to block protein-antibody complex formation during immunochemical analysis of ACAT-1

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-1 Polyclonal Antibody (Catalog No. 100028) 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

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4. 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).
5. Chang, C.C.Y., Huh, H.Y., Cadigan, K.M., *et al.* Molecular cloning and functional expression of human acyl-coenzyme A: Cholesterol acyltransferase cDNA in mutant chinese hamster ovary cells. *J. Biol. Chem.* **268(28)**, 20747-20755 (1993).
6. Chang, C.C.Y., Lee, C.-Y.G., Chang, E.T., *et al.* Recombinant acyl-CoA: cholesterol acyltransferase-1 (ACAT-1) purified to essential homogeneity utilizes cholesterol in mixed micelles or in vesicles in a highly cooperative manner. *J. Biol. Chem.* **273(52)**, 35132-35141 (1998).
7. Chang, C.C.Y., Chen, J., Thomas, M.A., *et al.* Regulation and immunolocalization of acyl-coenzyme A: cholesterol acytransferase in mammalian cells as studies with specific antibodies. *J. Biol. Chem.* **270(49)**, 29532-29540 (1995).

Related Product

ACAT-1 Polyclonal Antibody - Cat. No. 100028

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.

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