

A lipid droplet-specific capsule is present in rat adrenal cells: evidence from a monoclonal antibody

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摘要

Abstract

We have used a monoclonal antibody, A2, to study the structure and function on the lipid droplet capsule in steroidogenic adrenal cells. This antibody reacts with a 160-kD protein found in the rat adrenal cortex. Immunofluorescence microscopy shows a dominant rim pattern, which surrounds individual lipid droplets and is distinct from the filamentous vimentin staining. The boundary of lipid droplets in steroidogenic Leydig cells and 3T3 adipocytes is also immunostained by this antibody. The strong association of the 160-kD protein with the lipid droplet is demonstrated by its resistance to Triton X-100 extraction. Stimulation of steroid secretion by adrenocorticotropin results in the detachment of this protein from the lipid droplet and its movement to the cytosol. These findings suggest that the translocation of this 160-kD protein from lipid droplet surface to cytosol on stimulation might be important in facilitating the binding of cholesterol ester hydrolase to the surface of lipid droplets, as proposed for adipocytes, during lipolytic stimulation.