The purification and characterization of plasma membranes and the subcellular distribution of adenylate cyclase in mouse parotid gland

Durham, John P.

Galanti, Norbel

Revis, Nathaniel W.

1. 1. Plasma membranes have been purified 17-fold from mouse parotid gland homogenates prepared in hypertonic sucrose media using differential centrifugation. The method is fast and simple. The membranes were characterised by electron microscopy, enzyme composition and chemical composition. Further purification was achieved by isopycnic centrifugation in discontinuous sucrose gradients. 2. 2. The purified membranes contain an adenylate cyclase activity which is stimulated by isoproterenol and fluoride. Only 50% of the total adenylate cyclase activity sedimented in the plasma membrane fraction. The rest of the activity resided in the crude nuclear and mitochondrial pellets. However, this adenylate cyclase activity was not associated with these organelles but with membrane fragments in the pellets. Purified nuclei did not contain adenylate cyclase activity. 3. 3. Adenylate cyclase activity was also localised by electron microscopic cytochemistry. Besides being found at the plasma membran