Membrane Recycling

CIBA Foundation Symposium 92

Edited by D. Evered and G.M. Collins

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CIBA Foundation Symposium volumes are well recognised as providing authoritative coverage of important topics, and the present volume is no exception.

The book begins and ends with short contributions by Palade, Chairman of the Symposium, who remarks that the specific selection of termini in membrane recycling, and the prevention of randomization among membrane components, are two major unsolved problems for which answers need to be sought in terms of molecular interactions.

Insufficient space does not allow specific comments to be made on each chapter, or even a brief synopsis of their contents to be provided. Potential readers will wish to know, however, that the chapters fall roughly into two categories (although they are not sequentially divided in the book), one category dealing with entry into cells, and the other being concerned with intracellular synthesis and the exit of materials from cells. The former category includes a contribution on phagocytosis and pinocytosis in cultured fibroblasts and macrophages (Cohn and Steinman), and articles on the endocytosis of Fc receptors in macrophages (Mellman), enveloped animal viruses (Helenius and Marsh), low density lipoproteins (Goldstein, Anderson and Brown), epidermal growth factor (Cuatrecasas), and the endocytosis of IgG by the intestinal epithelium of neonatal rats (Rodewald and Abrahamson); together with contributions on coated pits and vesicles (Pearse), and on membrane flow and cell locomotion (Bretscher).

The second category of articles includes a view of Golgi function as a multi-stage fractional distillation process (Rothman), an article on the phosphorylation of the mannose residues of lysosomal enzymes (Kornfeld et al.), a long chapter on membrane recycling in secretory cells (Farquhar), and a contribution on the biogenesis of epithelial cell plasma membranes (Sabatini et al.). In a number of these chapters, some of the electron micrographs would have been better printed as plates rather than on text paper.

As is usual with CIBA Symposia, a considerable proportion of the volume is devoted to the several discussions, which followed the presented papers and which now make interesting reading. While it may be invidious to single out one specific comment, I was interested to see that Helenius considers that the mechanism used by enveloped viruses to fuse membranes, which involves interactions of special hydrophobic viral proteins with membranes, may perhaps have been derived during evolution from cellular processes in which a comparable mechanism operates.

Anyone interested in the fates of membranes in endocytosis and exocytosis will certainly find this book both informative and interesting.

J.A. Lucy

We reveal that Atg27 is delivered to the vacuole membrane and then recycled using a two-step recycling process. First, Atg27 is recycled from the vacuole to the endosome via the Snx4 complex and then from the endosome to the Golgi via the retromer complex. During the process of vacuole-to-endosome retrograde trafficking, Snx4 complexes assemble on the vacuolar surface and recognize specific residues in the cytoplasmic tail of Atg27. Membrane Recycling--Memory's Key? See allHide authors and affiliations. Science's STKE 28 Sep 2004: Vol. 2004, Issue 252, pp. tw349 DOI: 10.1126/stke.2522004tw349.Â You are going to email the following Membrane Recycling--Memory's Key? Message Subject (Your Name) has forwarded a page to you from Science Signaling. Message Body (Your Name) thought you would like to see this page from the Science Signaling web site. Membrane Recycling Dynamics in Growing and Nongrowing Axotomized Neurons In the majority of the experiments, axotomy was fol-lowed by decrease in membrane capacitance. The de-creased capacitance was recorded in axotomized neu-rons that did not extend lamellipodia (n Ï 29), as well as in axotomized neurons that did extend lamellipodia (n Ï 12). Membrane dynamics within the chick ciliary neuronal growth cone were investigated by using the membrane-impermeant dye FM1â€“43.Â Although the endocytotic portion of the synaptic vesicle recycling system appears to be, in large part, calcium-independent (Ryan et al., 1993; Wu and Betz, 1996), it is clear that calcium regulates exocytosis and that exocytosis is the proximate trigger for endocytosis at the presynaptic terminal (Augustine et al., 1996; Lledo, 1997). MemRe provides a certified and professional way to dispose and recycle your water treatment reverse Osmosis (RO) membranes at the end of lifetime. This not only in Germany underestimated issue currently leads to the refuse of acceptance of water and sewage management membranes by noted recycling companies. In 2015 spiral wound Reverse Osmosis Membranes were showing a production volume of approx. 1.5 Mio. pcs. and 65% of it were used to refurbish operating plants.