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TERMINOLOGICA

Concerning the concept 'organelle'

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Summary. Since the essential cytological functions are endergonic processes, the organelle cannot be defined without considering the necessary energy transfer. Therefore, a sensible definition may read: The organelle is a cytoplasmic structure with functional energy consumption.

The vital functions of ultrastructural cell differentiations consist of *endergonic* processes. Therefore, a definition of the organelle must include the capacity of energy transfer of the structure under consideration.

As a consequence, individual ribosomes are not organelles. Their function as synthesists of polypeptides is only possible in cooperation with a ribonucleic acid strand when they are organized as polysomes capable of putting into action free energy furnished by the surrounding groundplasm. So the polysome, the ATP converting system, must be interpreted as an organelle, although it is not enveloped by a biomembrane.

In the same way, an individual microtubule is not an organelle. Only an association of numerous microtubules cooperating with the energy furnishing groundplasm can function as an organelle (nuclear spindle, cortical microtubular system, etc.).

The same is true of individual enzyme molecules. Yet even crowds of such molecules suspended in the groundplasm or the enchylema¹ have not the status of organelles, in spite of their functional possibilities, because the catabolic breakdown which they catalize (digestion, fermentation, hydrolysis) are *exergonic* processes. Relevant experiments *in vitro* proceed without the addition of an energy donor (ATP, UTP, etc.) necessary for the functioning of the polysomal anabolism *in vitro*.

The structure which functions as an organelle in the case of hydrolases is the lysosome². The lysosomal vesicles survive only as long as the surrounding groundplasm furnishes

ATP or another donor of free energy. If this energy transfer is cut off, the enzymes in the vesicle not only hydrolyse its metabolites, but also autolyse the lysosomal membrane, previously maintained in a labile structural equilibrium, by a constant influx of energy.

Similar aspects are valid for the plasmalemma (plasma membrane). It can only resorb ions or molecules against their concentration gradients as long as it is furnished with free energy by the groundplasm.

Also groups of plasmic³ or muscular fibrils which are involved in the dynamics of motility can only act as organelles if the necessary energy transfer is ensured.

In contrast to such open systems, the organelle status of coated vesicles with endergonic energy input can more easily be demonstrated. This is true for the endoplasmic reticulum (synthesis of protein, intracellular nutritional transfer) or the Golgi apparatus (polymerization of oligosaccharides, secretion and excretion activity).

Thus the organelle can be defined as a cytoplasmic structural system which functions by endergonic energy transformation.

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PRO EXPERIMENTIS

Polyvinylchloride (PVC) particles implantation in mouse liver. A technique for experimental study of schistosome eggs-induced liver pathology¹

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Summary. An injection of suspended PVC particles in the caecal vein of mice induces a foreign-body portal granuloma reaction in the liver. Plastic casts of the portal system, after PVC particles implantation, show modifications in the portal bed and are compared with plastic casts obtained in mice infested by *Schistosoma mansoni*. This technique can be useful to study the cellular dynamics of the portal granuloma and can be a model for schistosomal eggs induced liver pathology.