

## **On the track of cell membrane proteins**

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All organisms are made of cells that are enclosed by a highly dynamic cellular structure called plasma membrane. Besides lipids, the plasma membrane contains numerous proteins, which perform specific tasks that are crucially important for individual cell and organism's survival. To be functional, proteins have to be properly synthesized, processed, delivered to appropriate domains of the plasma membrane and removed when they are damaged. Microscopy has contributed fundamental knowledge of these processes in the past. The aim of the talk is to present microscopic techniques currently used at the Institute of Cell Biology, Faculty of Medicine, that enable tracing transport of membrane proteins in the living cells and their localization at the ultrastructural level. On the urothelial (epithelium of the urinary bladder) model systems it will be shown how combining information obtained by light and electron microscopes gives advanced insight into function of the plasma membrane. The importance of our basic-research findings for human health will be presented.