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P08-020
Protein profile of erythrocyte membranes in acute pancreatitis: potential targets for therapeutic intervention

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Acute pancreatitis (AP) is a clinical condition with complications and a mortality rate up to 20%. The changes in the erythrocyte membrane can be expected to reflect the metabolic changes occurring within the acinar cell of pancreas and help reveal the molecular basis for the basolateral cell membrane changes in AP.

In a prospective study 42 consecutive patients with acute non-biliary pancreatitis (ANBP) were included. In all patients the erythrocyte membranes were examined within the first 24 h of admission and 10 days thereafter. Twenty-one age matched volunteers were used as a control group. The various red blood cell membrane proteins were separated by electrophoresis on SDS gels.

On admission, patients with ANBP have abnormal protein spectrum, in which most membrane proteins are damaged. There is a strong correlation between the clinical symptoms and intracellular malonyl dialdehyde concentration that underlines the crucial role of oxidative stress in pathogenesis of the disease. A structural network of proteins is located on the inner surface of the lipid bilayer, therefore defects in membrane associations result in loss of unsupported phospholipids. Standard treatment only improves up to 28% of protein and lipid profile of the erythrocyte membrane. This suggests that there is much to be gained by introducing into the traditional therapy drugs with immunomodulating, antioxidant and membrane protective properties. 22 patients were administered S-adenosylmethionine, ethylmethylhydroxypyridine succinate, and hydroxyethyl starch. This new therapeutic strategy normalized levels of α-, β- spectrin, pallidin, actin and lead to a significant decrease of malonyl dialdehyde concentration.

P08-021
What is the role of FAB1C in PSY1 mediated cell growth?

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In plant cells elongation depends on the increase of the size of the vacuole. The peptide hormone PSY1 stimulates cell elongation in root and hypocotyls. Based on a microarray study performed in our lab studying the effect of PSY1 treatment, the nine fold down regulated phosphatidylinositol-3P 5-kinase FAB1C is suggested to play a role in vacuole growth and acidification. In yeast it is shown that FAB1 affects membrane homeostasis and size as well as structure of the vacuole. Recent studies of FAB1C homologues Fab1A/B in *Arabidopsis thaliana* gave similarly results. Loss-of-function and gain-of-function of FAB1A/B affects endomembrane homeostasis and results in developmental abnormalities. Additionally, these mutants have shown an abnormal vacuolar phenotype. FAB1C belongs together with FAB1D to a unique group, only existing in the plant kingdom. All these plant FAB1 proteins share some features, like the C-terminal kinase domain and the central Grol-domain. Only the N-terminal FYVE domain is missing in the plant FAB1.

The Aim of this study is to investigate the unknown function of FAB1C. We hypothesize that FAB1C play an important role in the signal transduction from plasma membrane to vacuole. Therefore, localization and complementation studies are carried out in *Arabidopsis thaliana* as well as in *Saccharomyces cerevisiae*. These studies will cast light on the signal transduction between the membrane compartments. Investigations of vacuole development in different plant mutants will take place and we will perform the analysis of the PIP_2 composition. Further more, we will analyze the pH in *fab1c* plant lines.

P08-022
Lys-plasminogen affects platelet secretion and cytoskeleton rearrangement

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Plasminogen/plasmin system takes part not only in fibrinolysis but also in regulation of functional state of different cells. Platelet membrane can provide a surface for assembly of plasminogen and its activators. On the surface of certain blood cells native Glu-plasminogen is transformed into Lys-form, which possesses open conformation and can be more easily activated with the plasmin formation. We previously showed that Lys-plasminogen but not Glu-form inhibits human platelet aggregation. This study was aimed to evaluate effects of Lys-plasminogen on actin cytoskeleton reorganisation and α-granule secretion of human platelets. Exposition of platelet secretion markers, P-selectin and vitronectin, was measured by flow cytometry. Cytoskeletal reorganization was assessed by Western blot of fibrillar, globular and membrane-associated actin pools. It was shown that Lys-plasminogen, but not Glu-plasminogen, decreased thrombin-induced P-selectin expression (that indicates supression of α-granule release) and increased vitronectin exposition on the surface of activated platelets. Lys-plasminogen prevented association of membrane cortex actin into filamentous network, thus interferring thrombin-induced cytoskeleton reconstruction. It is likely that alterations of platelet secretion and aggregation occur due to impaired reorganization of actin cytoskeleton caused by Lys-plasminogen. Vitronectin, secreted from α-granule during platelet activation and stays bound to platelet surface also may interact with Lys-plasminogen sorbed on the platelets .The lack of Glu-plasminogen effect on vitronectin exposition can be explained by the fact that Lys-plasminogen expressed higher affinity for the vitronectin as compared with Glu-form. In summary, Lys-plasminogen which is formed on the cell surface can be involved into regulation of functional state of blood cells.

P08-023
Proteins of plasma membranes of villous syncytiotrophoblast and their posttranslational modification in case of placental insufficiency

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Objective: The study of the spectrum of villous syncytiotrophoblast membrane proteins and their posttranslational modification in case of placental insufficiency (PI).
Methods: The study was made in women with physiological pregnancy (n = 32) and with pregnancy complicated with PI (n = 27). Membranes of villous syncytiotrophoblast were released by means of the differential ultracentrifugation. Solubilized mem-

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