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Program

10⁰⁰-10²⁰ - Cristian Țăpurică, Lăcrămioara Ivănescu - Plants of sand dunes - morphological and structural adaptations

Abstract: A special ecological group of plants are the plants of sand dunes. In this paper we developed on the one side a scientific documentary about morphological and structural adaptations of this group of plants, and on the other side, we tried to identify, based on histological investigations in the laboratory the particular elements of structure. The species investigated were collected from Marine Biological Station from Agigea, Constanta and they are the following: *Alyssum borzaeanum* (Fam. *Brasicaceae*), *Convolvulus persicus* (Fam. *Convolvulaceae*), *Elymus sabulosus* (Fam. Poaceae), *Ephedra distachya* (Fam. *Ephedraceae*), *Secale sylvestre* (Fam. *Poaceae*). In order to obtain microscopic preparations we made sections on material preserved in ethilic alcohol 700 using the hand microtome, common elder marrow and botanical razor. Sections were then stained using the method of double staining: green iodine - carmine alum and observed at photon microscopy. Thus we conclude that, although part of different botanical families, because the common conditions of existence - plants of sand – they presents a serial of common structural features at the aerial organs level.

10²⁰-10⁴⁰- **Răzvan Boiangiu,** <u>**Doina Guzun</u>**, **Marius Mihășan** - Time dependent accumulation of nicotine derivatives in the culture medium of *Arthrobacter nicotinovorans* pAO1</u>

Abstract: Previous studies have shown that the metabolic intermediate 6-hidroxy-D-nicotine (6HNic) found in the *Arthrobacter nicotinovorans* pAO1+ nicotine catabolic pathway has the ability to bind nicotinic acetylcholine receptors and to sustain spatial memory in rats. These properties make 6HNic a valuable compound with some potential for medical applications, thereby a suitable, simple and efficient method for producing 6hidroxy-D-nicotine is necessary. Here, we focus on identifying the best moment for harvesting A. nicotinovorans cells in order to directly convert nicotine to 6HNic with the best yield. The growth of *A. nicotinovorans* pAO1+ was monitored and the correlation between the growth phases and nicotine metabolism was established. After about 5 hours of lag, the strain entered the log phase and was fully grown after 10 hours. The nicotine concentration began to drop dramatically as the pAO1+ culture reached saturation and was depleted in 5 hours. As the nicotine concentration dropped, 6 HNic began to accumulate, reaching the maximum levels after about 11 hours of growth. Two other products could be detected by HPLC, one which was identified as the nicotine-blue (NB) pigment and a second a still unknown end-product.

1040-1100 - Madalina Oana Popa, Dariya Polyanina, Jost Ludwig - Investigation of potassium

transport in yeast cells by monitoring intracellular pH changes

Abstract: The intracellular H+ ion concentration (usually expressed as pH) is an important determinant of the ability of cells to perform their tasks. Since H+ is charged, all translocations of H+ ions are accompanied by a change in the membrane potential that in turn also has to be compensated. This is one of the reasons why H+ homeostasis is strongly connected to K+ (the most abundant intracellular cation) homeostasis. Being able to adapt to strongly changing environments, yeast cells (*Saccharomyces cerevisiae*) are a good model for studying eukaryotic cells homeostasis.

11⁰⁰-11²⁰- <u>Alina Florentina Senescu</u>, Ruxandra Madalina Oghinciuc, Irina Luciana Gurzu, Lucian Gorgan, Bogdan Gurzu - The pro-inflammatory effects of angiotensin on pulmonary allergic disease

Abstract: Introduction: Even if there are many studies that sustain contribution of the renin-angiotensin system (RAS) to the modulation of the immune response, not all data showed a beneficial effect of RAS blockade on the pathogenesis of immune-mediated diseases. Methods: To determine if and to what extent blocking of RAS could have beneficial effects on development of allergic lung diseases, the antigen-specific airway hyperresponsiveness and accumulation of inflammatory cells were assessed on bronchi and pulmonary tissue obtained from ovalbumin (OVA) -sensitized rats treated orally with 30 mg/kg/day losartan (a blocker of angiotensin II type 1 receptor) on the last week of sensitization protocol. Results: Blocking of RAS reduced the acetylcholine - induced increase of airway resistance on challenged rats by more than a third and there was no difference between normal and OVA-sensitized losartan-treated rats on the total number of cells from bronchoalveolar lavage fluid. Histological examination revealed that losartan treatment decreased infiltration of inflammatory cells on the walls of lobar and segamental bronchi and in peribronchiolar/ perivascular space from this level. Conclusion: These results suggest that blocking of RAS reduces effects of OVA-challenge in sensitized rats and could provide an interesting concept for developing suitable therapeutic approaches.

11²⁰-11⁴⁰ - <u>Ruxandra Madalina Oghinciuc</u>, Alina Florentina Senescu, Irina Luciana Gurzu, Lucian Gorgan, Bogdan Gurzu - The involvement of apelin/ APJ receptor system on allergic lung disease development

Abstract: Introduction: The role of apelin (AP) on immune response regulation is sustained by new data. Objective: To investigate the involvement of apelin/ APJ receptor system on allergic-induced pulmonary inflammatory disease. Methods: The ovalbumin (OVA)-induced variation of specific airway resistance (sRaw) and accumulation of inflammatory cells on bronchoalveolar lavage fluid (BALF) were comparatively assessed from rats treated with vehicle, apelin 13 (AP13) or apelin antagonist F13A by intratracheal instillation before OVA challenge. Results: The AP13 administration reduced the increase of sRaw by more than 50% as compared with vehicle. F13A significantly increase the total number of cells on BALF as compared with vehicle and amplified the sRaw augmentation as compared with AP13 treated rats. Conclusion: These results sustain the antiinflammatory effects of apelin/ APJ receptor system in the lung and and could provide an interesting concept for developing suitable therapeutic approaches on allergic pulmonary inflammation.