

## POSTERS

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serum total cholesterol levels and C18-C24 CerPCho, C22-C24 CERs in SCD patients. Patients with SCD had significantly elevated serum activity of N-SMase, increased circulating levels of CIP and SIP compared to controls. Erythrocytes are an important source for circulating sphingolipids. A probable decrease of sphingomyelin content in SCD red cell membranes can therefore lead to increased susceptibility to hemolysis. This work was supported by a grant (ID: 2557) from Akdeniz University Research Foundation.

### P.09-223-Mon

#### New insights into allergenic relationship between red meat and cow's milk

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Red meat allergy is a novel form of food allergy with severe delayed allergic reactions where IgE antibodies are directed against the carbohydrate galactose- $\alpha$ -1,3-galactose ( $\alpha$ -Gal) epitope. The  $\alpha$ -Gal epitope is abundantly expressed on glycolipids and glycoproteins from non-primate mammals, but not in humans. Many red meat allergic patients report allergic reactions after drinking cow's milk. We investigated molecular basics of IgE reactivity to milk proteins among red meat allergic patients. Milk proteins, namely  $\alpha$ -casein,  $\beta$ -casein,  $\kappa$ -casein,  $\alpha$ -lactalbumin,  $\beta$ -lactoglobulin, bovine  $\gamma$ -globulin (BGG) were tested by immunoblot and inhibition ELISA using anti- $\alpha$ -Gal antibody and red meat allergic patient's sera. Basophil activation test was performed with milk and milk proteins. All the tested proteins were negative for the presence of  $\alpha$ -Gal epitope except BGG. BGG was also shown to bind IgE antibodies from a pool of 15 red meat allergic patients, and the binding was almost completely abrogated by thyroglobulin (a glycoprotein rich in  $\alpha$ -Gal epitope). Additionally, ELISA experiment showed that BGG exerts a dose-dependent inhibition of red meat allergic patients' IgE binding to  $\alpha$ -Gal. Inhibition ELISA with raw milk and commercially available milk preparations showed that raw milk was a more potent inhibitor of the IgE binding than the commercially available milks. Importantly, activation of red meat allergic patient's basophils by BGG and milk was demonstrated. In this study we identified BGG as carrier of the  $\alpha$ -Gal epitope in milk that bound IgE antibodies and furthermore activated basophils of red meat allergic patients. Taken together, the results highlight the importance of BGG as a clinically relevant milk allergen among the red meat allergic population.

### P.09-224-Tue

#### Apoptotic and antiproliferative processes from dysplastic and metastatic prostate cells, modulated by proteolytic enzymes of entomological origin

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Proteolytic enzymes have important medical and pharmaceutical application due to their key role in developmental and tissue homeostasis during the life-cycle of many organisms. The delicate balance between cell proliferation and cell death is regulated by the activation of caspases, a conserved family of cysteine proteases, but also non-caspase proteases have their role in programmed cell death. Caspases from many organisms have been characterized, including several insects species. Although several basic strategies are used to activate and regulate caspase-dependent cell death, mammals and insects emphasize distinct points of control. The aim of our study was to explore the apoptotic process and its correlation with the distinct proteolytic activity of two types of entomological complexes. Also, we investigated their impact on one of the first hallmark of carcinogenic progression: the anchorage-independent growth, „in vitro” expressed by the soft agar colony formation assay. The medical transposition of this research will be in prostate's proliferative dysregulation (benign hyperplasia, prostate cancer) generated by the stromal processes of transdifferentiation and cellular senescence, implicated in stromal modulation. The experimental models targeted standardised cell lines PWR-1E and DU-145 cells, relevant for prostate dysplasia and adenocarcinoma metastasis respectively. We used the flow cytometry technique for early and late apoptosis detection (annexin V and PE detection), soft agar colony formation assay for clonogenic capacity evaluation and gelatin- zymography for protease activity quantification. Results correlate a specific proteolytic activity of the entomological complex with its pro-apoptotic and anti-proliferative action. We highlighted one of the basic mechanisms that interrelates these processes and may substantiate therapeutic action in prostate dysfunctions.

### P.09-225-Wed

#### Active and passive transport of carnosine and its derivatives into neurons

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The dipeptide L-carnosine is a recognized neuroprotective agent effective both in animal models and in cultured neurons. Carnosine has been shown to enter neurons and exert an antioxidant effect. Exogenously introduced carnosine is mainly transported into neurons via the oligopeptide transporter PEPT2. Since exogenous carnosine is rapidly cleaved by serum carnosinase, we are developing carnosinase-resistant carnosine derivatives to be used as neuroprotective drugs. Carnosine in a nanomicellar complex with  $\alpha$ -lipoic acid is able to enter neurons, becomes more resistant to carnosinase, and shows neuroprotective activity at substantially lower concentrations. The study of the effectiveness of PEPT2-mediated transport of both carnosine and its derivatives into neurons is an important aspect of said drug development. To determine the proportion of passive and PEPT2-mediated active