



Semmelweis Symposium 2013

**PROGRAMME
&
BOOK OF ABSTRACTS**

7-9 November 2013, Budapest, Hungary

LIST OF POSTER PRESENTATIONS

P-01	AL-AISSA, Zahra	Decreased cord blood serum Dipeptidyl-Peptidase 4 (DPP4) enzymatic activity in gestational Diabetes Mellitus	63
P-02	BALAJTHY, András	Inherited disorder of cholesterol biosynthesis (SLO syndrome) modifies the function of Kv1.3 channels and proliferation of lymphocytes	64
P-03	BAZSÓ, Anna	Coinciding psoriasis in autoimmune diseases	65
P-04	BENKÓ, Rita	Systemic and local poly(ADP-ribose)polymerase activation in children's Crohn's disease	66
P-05	SZILI, Dániel	TGF β activated Kinase 1 (TAK1) at the crossroads of B cell receptor, BAFF receptor and TLR9 signaling pathways in human B cells	67
P-06	BUZÁS, Edit	Improved circulating microparticle analysis in acid-citrate dextrose (ACD) anticoagulant tube	68
P-07	FODOR, Lili	YAP1 in the Hippo pathway influences asthma	69
P-08	FOLYOVICH, András	Kinetics of inflammatory markers in acute ischemic stroke and their relevance in stroke-induced immunosuppression	70
P-09	HORVÁTI, Kata	New antigens to eliminate the major risk factor for revolutionary anti-TNF- α therapy: immunodiagnosis of latent tuberculosis	71
P-10	KAPITÁNY, Anikó	Examination of peripheral blood dendritic cells in atopic dermatitis	72
P-11	KARÁDY, Júlia	The preoperative complement C3a concentration predicts the clinical outcome of cardiac resynchronization therapy (CRT)	73
P-12	KOSZTIN, Annamária	Serum apelin as a predictor of right ventricular dysfunction	74
P-13	KOVÁCS, Dávid	The relationship between inflammation and depression - an overview	75
P-14	KOVÁCS, László	Galectin-1 as a potential novel contributor to the pathogenesis of systemic lupus erythematosus	76
P-15	KOVACS, Péter	Psychological changes in melanoma patients during ipilimumab treatment compared to low-dose interferon alpha therapy	77
P-16	KRUK, Emese	Association of the tumor necrosis factor -308 A/G promoter polymorphism with tic symptoms	78
P-17	LAUTNER-CSORBA Orsolya	Roles of folate pathway gene variations in susceptibility to childhood acute lymphoid leukemia	79
P-18	BJÖRKMAN, Lena	Endogenous acute phase serum amyloid A lacks inflammatory activity, contrasting two recombinant variants that activates human neutrophils	80

P-02

INHERITED DISORDER OF CHOLESTEROL BIOSYNTHESIS (SLO SYNDROME) MODIFIES THE FUNCTION OF KV1.3 CHANNELS AND PROLIFERATION OF LYMPHOCYTES

András Balajthy, Zoltán Pethő, Sándor Somodi, György Panyi, Péter Hajdú

Department of Biophysics and Cell Biology, University of Debrecen, Debrecen, Hungary

Background: The Smith-Lemli-Opitz syndrome (SLO) is a multiple congenital anomaly, caused by the decreased or absence of activity of 7-dehydrocholesterol (7DHC) reductase. 7DHC reductase catalyses the last step of the cholesterol biosynthesis, that's why patients with SLO have lower serum cholesterol and higher 7-DHC levels. The alteration of cholesterol/7DHC ratio is also affected the biophysical properties of the cell membrane like fluidity, raft organization. It is well known that the changing theme parameters of the cell membrane may influence the functioning of the ion channels. In our present study we aimed to determine the effect of SLO on the gating of Kv1.3 channels and proliferation of T cells.

Methods: T-lymphocytes were isolated from the peripheral blood of healthy volunteers as control and patients with SLO. The biophysical characteristics of the Kv1.3 ion channel were studied using the patch-clamp technique. We determined the kinetic and equilibrium parameters characterizing the gating of Kv1.3 channels. Lymphocyte proliferation was measured using CFSE staining with anti-CD3 and anti-CD28 stimulation.

Results: Our results indicate that the activation and inactivation time constants were significantly slower in the patients with SLO compared to the control group. Besides, the midpoint of the steady state activation was shifted toward positive voltages in SLO ($\tau_{a,SLO}$: 0.72 ± 0.04 ms, $\tau_{a,c}$: 0.6 ± 0.04 ms; $\tau_{i,SLO}$: 238 ± 26.8 ms, $\tau_{i,c}$: 213.19 ± 15.58 ms; $V_{1/2,SLO}$: -21.76 ± 2.22 mV, $V_{1/2,c}$: -27.98 ± 0.99 mV). The CFSE-based assay showed that T cells from SLO patients challenged by anti-CD3 and anti-CD28 exhibited lower proliferation rate than control cells.

Conclusion: We suppose that the alteration of the biophysical properties of Kv1.3 and proliferation of T-cells may affect the physiological function of the lymphocytes.