

# 10<sup>th</sup> Molecular, Cell and Immune Biology Winter Symposium



*organized by the  
Molecular, Cellular and Immune Biology Doctoral School,  
University of Debrecen*

**Debrecen, 6-7 January, 2017**  
**Venue: IVDI Building**



### ***Regular talks***

- 11:45-12:00 József Horváth:  
Oral health may affect the performance of mRNA-based saliva biomarkers for oral squamous cell cancer
- 12:00-12:15 Csaba Bankó:  
Can radiofrequency radiation cause DNA damage in mammalian cells or not?
- 12:15-12:30 Gábor Fidler:  
DNA barcoding coupled with High Resolution Melting Analysis enables rapid and accurate distinction of *Aspergillus* species.
- 12:30-12:45 Zsófia Szojka:  
The role of HIV-2 in dual infection
- 12:45-13:00 Eszter Deák:  
Corneal microstructural changes associated with tear proteins in retinopathy: a 2 years follow-up of young patients with type 1 diabetes

**13:00-14:00 Lunch break**

**14:00-16:00 Section 3**

**Chair: Róbert Király**

### ***Introductory lecture***

- 14:00-14:30 Monika Fuxreiter:  
Higher-order assemblies - protein aggregation revisited

### ***Regular talks***

- 14:30-14:45 Viktor Ambrus:  
Protein dynamics and evolution of protein functions
- 14:45-15:00 Norbert Duró:  
The role of intrinsically disordered (ID) protein segments in the prion-like aggregation of Mitochondrial Antiviral Signaling (MAVS) protein
- 15:00-15:15 Mária Golda:  
Expression and analysis of the retrotransposon-derived protein PEG10
- 15:15- 15:30 Norbert Kassay:  
Biochemical characterization and inhibitory studies of HTLV-2 and HTLV-3 proteases

15:30-15:45 Rita Elek:  
Structure/function analysis of transglutaminase 2 (TG2) via coeliac specific anti-TG2 antibody binding epitopes

15:45- 16:00 Eszter Boldizsár:  
The presence of HOFI promotes tumor progression

**16:00-16:20 Coffee break**

**16:20-18:00 Section 4**

**Chair: Máté Demény**

***Introductory lecture***

16:20-16:45 Éva Csósz:  
State-of-the art proteomics to dig deeper into the proteome  
Tears as a good candidate for follow-up studies in case of patients having glaucoma surgery

***Regular talks***

16:45-17:00 Katalin Koczok:  
Systematic analysis of the effect of maternal cell contamination on prenatal molecular testing

17:00-17:15 Bernadett Márkus:  
Investigation of the neutrophil extracellular trap patterns elicited by different stimuli

17:15-17:30 Károly Jambrovics:  
Evaluation of the pathobiological function of tissue transglutaminase 2 (TG2) in NB4, acute promyelocytic leukaemia cell lines

17:30-17:45 Tibor Sághy:  
Loss of transglutaminase 3 sensitizes mice kept on high fat diet to developing obesity and insulin resistance

17:45-18:00 Zsófia Budai:  
Comparison of the necrotic and apoptotic cell uptake by mouse bone marrow-derived macrophages

18:00-18:15 Máté Sütő:  
An oxidized guanine base (7,8-dihydro-8-oxoguanine) could serve as an alarm signal for dendritic cells

## January 7

**9:00-11:20 Section 5**

**Chair: Lajos Széles**

### *Introductory lecture*

9:00-9:20 Gergely Nagy:  
Gene regulation by response elements

### *Regular talks*

9:20-9:35 Attila Horváth:  
Characterization and modeling of lineage-specific enhancer states and transitions in macrophages

9:35-9:50 Attila Pap:  
Ch25h as a target of ligand independent repressor activity of PPAR $\gamma$  in macrophages.

9:50-10:05 Andreas Patsalos:  
Macrophage BACH1, a heme regulated transcriptional repressor, controls HMOX1 and skeletal muscle regeneration

10:05-10:20 Lilla Ozgyin:  
Genomic context-dependent and independent gene regulatory variation in human B-lymphoblastoid cells

10:20-10:35 Dóra Bojcsuk:  
Inducible super-enhancers are organized based on canonical signal-specific transcription factor binding elements

10:35-10:50 Edina Erdős:  
Genome-wide mapping of COUP-TFII and ER $\alpha$  co-occupancy in breast cancer cells

10:50-11:05 Erik Czipa:  
Comprehensive analysis of the DNA binding topology of transcription factors from more than 1500 human ChIP-seq experiments

11:05-11:20 Tamás Csuth:  
Generation and study of biotinylated transcription factors in murine pluripotent stem cells

**11:20-13:00 Lunch – buffet provided at site  
Section 6 (Poster viewing Session)**

**Chair: András Mádi**

## ***Posters***

Anita Bogár:

Experimental and comparative study of human and mouse transglutaminase 2 enzymes

Ádám Csőke:

Investigation of possible crossreactive mammalian proteins of deamidated gliadin peptides (DGP) and DGP-specific antibodies in celiac disease patients

Éva Fige:

Role of Nur77 in the regulation of efferocytosis

Mónika Gönczi:

MEF2D regulates myocyte differentiation via a fuzzy domain

Zsuzsanna Gyöngy:

Elucidation of the conformational changes of ABCG2 in permeabilized cells

Márton Miskei:

Towards predicting disorder-to-order transitions and fuzzy regions

Matthew Nock:

Building up a homology model for mouse and human transglutaminase 2 to study differences in their catalytic activities

Rashmi Sharma:

FuzDB: Fuzzy Complexes Database

Brigitta Szabo:

Role of three lineage specific transcription factors during early stage development of ES cell-derived DC progenitors

Zsuzsa Szabó:

Characterisation of the isopeptidase activity of human blood coagulation factor

Tímea Székely:

Transdab - reloaded

Vanda Toldi:

Determination the effectiveness of inhibitors on HTLV-2 PR

Fruzsina Zsolyomi:

Patterns of dynamics can reveal evolutionary relationships in proteins

**13:00-14:50 Section 7**

**Chair: István Szatmári**

***Introductory lecture***

13:00-13:20 Zsolt Czimmerer:  
STAT6-mediated direct repression of inflammatory enhancers limits inflammasome activation in alternatively polarized macrophages

***Regular talks***

13:20-13:35 Krisztián Bene:  
The human dendritic cell-mediated inflammatory response is initiated by the molecular interaction between mucus adhesins and C-type lectin receptors

13:35-13:50 Gergő Elek Kovács:  
Studies of the pro-inflammatory cytokine production of NLRC5-silenced LPS-induced human macrophages

13:50-14:05 Anett Mázló:  
Novel mechanisms of mesenchymal stem cell-mediated immune modulation

14:05-14:20 Márta Tóth:  
The effects of cell wall modification of probiotic bacteria on human dendritic cell functions

14:20-14:35 Pál Botó:  
Generation of functional dendritic cells using genetically modified inducible mES system

14:35-14:50 Nicolas Giannakis:  
Dynamically changing lipid profiles during muscle tissue regeneration in mice

**14:50-15:10 Coffee break**

**15:10-17:00 Section 8**

**Chair: Bálint Bálint**

***Introductory lecture***

15:10-15:30 Ágnes Mosolygó-Lukács:  
Chromosomal topography of the R-loop binding protein NDX and RNA-DNA hybrids in *Arabidopsis*

***Regular talks***

15:30-15:45 László Imre:  
Nucleosome stability through the spectacles of quantitative imaging: eviction by loop-relaxation

- 15:45-16:00 László Halász:  
RNA-DNA hybrid (R-loop) immunoprecipitation mapping: digging to the ground
- 16:00-16:15 Mária Csumita:  
Investigation of dynamics of AP-1 activation and dimerization in TLR-activated dendritic cells
- 16:15-16:30 Péter Nánási:  
Anthracycline-induced histone H1 redistribution in living cells
- 16:30-16:45 Szabolcs Tarapcsák:  
Studying the catalytic cycle of P-glycoprotein using Walker B and A-loop mutants
- 16:45-17:00 Erfaneh Firouzi Niaki:  
Measurement of interstrand DNA crosslinks generated by anticancer agents through a modified alkaline comet assay

<b>17:00</b>	<b>Concluding remarks</b>	László Fésüs (Chair) Gábor Szabó Szilvia Benkő Sándor Bíró Mónika Fuxreiter Bálint Nagy Éva Rajnavölgyi József Tőzsér Zsuzsa Szondy
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