EFIS

European Federation of Immunological Societies

3rd BELGRADE EFIS SYMPOSIUM ON IMMUNOREGULATION

Immunity, Infection, Autoimmunity and Aging

Hotel Izvor, Arandjelovac Spa (Belgrade)

24-27 May 2015

IMMUNOLOGICAL SOCIETY OF SERBIA

Organizers: Miodrag L. Lukic, Janko Nikolich-Zugich, Stipan Jonjic

UNIVERSITY OF KRAGUJEVAC
FACULTY OF MEDICAL SCIENCES

Welcome

It is our pleasure to invite you to welcome you in Arandjelovac at the occasion of the 3rd Belgrade EFIS Symposium on Immunoregulation.

As the previous two, the meeting is organized under the auspices and with support of European Federation of Immunological Societies. The meeting will offer the lectures and discussions related to several major topics of contemporary immunology. The list of speakers includes outstanding scientists from Europe, Asia and North America and oral presentations from the participants. There will be also time for poster presentations and discussions with invited speakers.

Arandjelovac Izvor Spa is an ideal place for relaxed and productive scientific meeting and offers pleasant environment for informal discussions.

We have also organized sightseeing of Belgrade.
Belgrade *is a hospitable city at the confluence of the two major European rivers (Danube and Sava). It is one of the oldest cities in Europe with tumultuous history and vibrant cultural life and entertainment at present.*

Once again, we wholeheartedly welcome you.

Miodrag L. Lukic
Janko Nikolich-Zugich,
Stipan Jonjic

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THIS SYMPOSIUM IS SPONSORED BY:

- EFIS European Federation of Immunology Societies
- Center for Molecular Medicine, Faculty of Medical Sciences, University of Kragujevac, Serbia
- Serbian Society of Immunology

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PROGRAM

DAY 1: SUNDAY

17.00-17.30 **Welcome (M. L. Lukic, J. Nikolich-Zugich, S. Jonjic)**

Opening session

Chairs: A. Erdei - J. Nikolich - Zugich

17.30-18.00 Lorenzo Moretta (Institute Giannina Gasilini, Genova, Italy)
- *Natural killer cells: new approaches in the therapy of high risk leukemias*

18.00-18.30 Rene Van Lier (Sanquin Blood Supply Foundation, Amsterdam, The Netherlands)
- *Properties of tissue-resident CD8⁺ memory Tcells*

18.30-19.00 Foo Y. Liew (University of Glasgow, Glasgow, UK)
- *The role of cytokines in infections and inflammation*

19.30- **Conference dinner (by invitation)**

DAY 2: MONDAY

07.30-08.30 **Breakfast**

Innate immune response in health and disease

Chairs: R. Van Lier - S. Jonjic

08.30-09.00 Marco Colonna (Washington University, St. Louis, MO, USA) - *Innate lymphoid cells in immunity*

09.00-09.30 Adrian Hayday (Kings College, London, UK) - *Epithelial regulation of intraepithelial T cell repertoires and response*

09.30-10.00 Andrew N. McKenzie (University of Cambridge, Cambridge, UK) - *Type-2 innate lymphoid cells in immunity and disease*

10.00-10.30 Andreas Diefenbach (Spemann Graduate School of Biology and Medicine, Institute of Medical Microbiology & Hygiene, Germany) - *Transcriptional control of innate lymphoid cell fate decisions*

10.30-11.00 **Coffee break**

Lymphocyte repertoire and immune response

Chairs: B. Kyewsky - G. Leposavic

11.30-12.00 Kristin A. Hogquist (University of Minnesota, Minneapolis, MN, USA) - *TCR reactivity in thymic selection*

12.00-12.30 Stephen Jameson (University of Minnesota, Minneapolis, MN, USA) - The transcription factor KLF2 regulates T cell trafficking and differentiation

12.30-13.00 Yousuke Takahama (Tokushima University, Tokushima, Japan) - *Thymic microenvironments that form T cell repertoire*

13.00-13.30 Juan Carlos Zuniga-Pflucker (University of Toronto, Toronto, Canada) - *Initiation of the T-lineage development program in response to Notch signals requires GATA-3 for survival and full commitment of early progenitors*

13.30-15.30 **Break and poster viewing**

15.30-17.30 **Immunometabolism and glycoimmunology**
Chairs: S. Gay - S. Stosic Grujicic

15.30-16.00 Marc Donath (University of Basel, Basel, Switzerland) - *Targeting inflammation in treatment of Type 2 diabetes: time to start*

16.00-16.30 Yvette Van Kooyk (University of Amsterdam, Amsterdam, The Netherlands) - *Nanotechnology aimed to design DC targeting vaccines for the induction of tumor-immunity*

16.30-17.00 Nada Pejnovic (University of Kragujevac, Kragujevac, Serbia) - *Galectin-3 in type 2 diabetes and immunometabolism*

17.00-17.30 Bojan Polic (University of Rijeka, Rijeka, Croatia) - *NK cells link obesity-induced adipose stress to inflammation and insulin resistance*

17.30-19.00 **Free time**

19.00-20.00 **Dinner**

20.00-22.00 **Poster discussion with refreshment**

DAY 3: TUESDAY

07.30-08.30 **Breakfast**

08.30-12.30 **Mechanism of tolerance, autoimmunity and immunopathology**
Chairs: Y. Van Kooyk - M. L. Lukic

08.30-09.00 Bruno Kyewski (German Center for Cancer Research, Heidelberg, Germany) - *Self-antigen diversity in the thymus: what thymocytes see and don`t see*

09.00-09.30 Steffen Gay (University of Zurich, Zurich, Switzerland) - *Epigenetic regulation of inflammation in autoimmune diseases*

09.30-10.00 Sergei Nedospasov (Russian Academy of Science, Moscow, Russia) - *Dissecting pathogenic sources of TNF in disease and cell type-restricted cytokine targeting*

10.00-10.30 Anna Erdei (Eotvos Lorand University, Budapest, Hungary) - *Crosstalk between complement and Toll-like receptors; regulation of human B cell responses under physiological and autoimmune conditions*

10.30-11.00 **Coffee break**

11.00-11.30 Burkhard Becher (University of Zurich, Zurich, Switzerland) - *Cytokine networks in autoimmunity: How helper T cells instruct macrophages*

11.30-12.00 Branka Horvat (International Center for Infectiology Research-CIRI, Lyon, France) - *Emerging contagion: immunopathogenesis of henipavirus infection*

12.00-13.30 **Short presentations**
Chairs: Dj. Miljkovic – M. Colic

Megan Smithey (University of Arizona, College of Medicine, Tucson, USA) - *Aging with MCMV maintains TCR repertoire diversity in late life*

Branka Popovic (Faculty of Medicine, University of Rijeka, Rijeka, Croatia) - *IL-33-dependent immunosuppressive Treg responses to liver damage during MCMV infection*

Vivian Turner (University of Edimburgh, Edimburgh, UK) - *Dysregulated function of marginal zone B cells in aged mice*

Marija Milovanovic (Faculty of Medical Sciences, University of Kragujevac, Kragujevac, Serbia) - *CMV infection in neonatal and adult mice induces susceptibility to EAE in resistant BALB/c mice*

Kamar Sulu Atretkhany (Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow, Russia) - *Systemic TNF ablation results in delayed tumor growth and reduced MDSC accumulation in transplantable tumor model*

Bojan Jevtic (Institute for Biological Research "Sinisa Stankovic", University of Belgrade, Belgrade, Serbia) - *MicroRNA-155 Contributes to Re-activation of Encephalitogenic T Cells*

13.30-14.30 **Break and poster reviewing**

14.30-17.00 **Persistent and long term infections and their impact on aging**
Chairs: M. Colonna – B. Polic

14.30-15.00 Beatrix Grubeck-Loebenstein (University of Innsbruck, Innsbruck, Austria) - *Aging and adaptive immunity in the human bone marrow*

15.00-15.30 Arne Akbar (University College London, London, UK) - *The regulation of T cell senescence and metabolism by p38 MAPkinease signaling*

15.30-16.00 Annette Oxenius (Swiss Federal Institute, Zurich, Switzerland) - *Regulation of T cell Immunity during viral infections*

16.00-16.30 Stipan Jonjic (University of Rijeka, Rijeka, Croatia) - *Vaccines and innate immunity: lessons from cytomegalovirus immunoevasion*

16.30-17.00 Janko Nikolich-Zugich (University of Arizona, Tucson, AZ, USA) - *TGF-β impairs CD4 and antibody responses in old mice to increase Chikungunya virus disease severity and viral persistence*

17.30-24.00 **Excursion and conference dinner**

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DAY 4: WEDNESDAY

07.30-08.30 **Breakfast**

Short presentation

Chairs: M. Smithey – V. Volarevic

Miljana Momcilovic (Institute for Biological Research "Sinisa Stankovic", University of Belgrade, Belgrade, Serbia) - *In Vitro Effects of Binuclear (η^6-p-cymene) Ruthenium (II) Complex Containing Bridging Bis (nicotinate)-Polyethylene Glycol Ester Ligand on Differentiation Pathways of Murine Th Lymphocytes*

Lovro Lamot (University of Zagreb School of Medicine, Zagreb, Croatia) -*TRP channels overexpression contributes to inflammasome activation in clavicular cortical hyperostosis*

Gergely Toldi (Semmelweis University, Budapest, Hungary) -*Impact of aging on calcium influx and potassium channel characteristics of T lymphocytes*

Vladislav Volarevic (Faculty of Medical Sciences, University of Kragujevac, Kragujevac, Serbia) - *Mesenchymal stem cells attenuate acute liver injury mediated by NKT cells*

Microbiota, Autoimmunity Inflammation
Chairs: S. Nedospasov – N. Pejnovic

09.30-10.00 Leo Joosten (University of Nijmegen, Nijmegen, The Netherlands - *Trained Immunity: consequences for inflammatory diseases?*

10.00-10.30 Hannes Stockinger (Medical University of Vienna, Vienna, Austria) - *Novel macrophage subsets with potential implication in inflammatory diseases*

10.30-11.00 Hartmut Wekerle- (Max Planck Institute for Neurobiology, Munich, Germany) - *Ignitions of brain autoimmune diseases in the gut*

11.00-11.30 Ofer Mandelboim (Immunology and Cancer Research Hebrew University, Faculty of Medicine, Jerusalem, Israel) - *Recognition of bacteria by NK cells*

11.30-12.00 Vishwa Deep Dixit (Yale University, New Haven, CT, USA) - *Immunometabolic control of age-related inflammation*

Chairs: V. Pravica-M. Kataranovski

12.00-12.30 N. Avrion Mitchison (University College London, London, UK)

Clossing comments

Aging affects rat inflammatory peritoneal exudate composition and macrophage inflammatory mediator production in a strain-dependent manner

Stanislava Stanojević[1], Ivana Ćuruvija[1], Veljko Blagojević[1], Ivana Vujnović[1], Raisa Petrović[1], Mirjana Dimitrijević[1], Gordana Leposavić[2]

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The present study was designed to examine influence of aging on macrophage proinflammatory/anti-inflammatory capacity in rat model of thioglycollate-induced peritonitis. Peritoneal macrophages were isolated from young (3-months-old) and aged (18-months-old) Dark Agouti (DA) and Albino Oxford (AO) rats seven days post-injection of thioglycollate medium. Freshly isolated peritoneal exudate cells were examined for the expression of CD163, CCR7, CD14 and TLR4, whereas cytokine production (TNF-α, IL-6 and IL-10) and arginine metabolism end-products (NO and urea) were assayed *in vitro* under basal conditions and following stimulation with LPS. In DA rat inflammatory peritoneal exudate, aging diminished the frequency of cells with a "resolving macrophage" CD14+CD163+ phenotype. However, in AO rats, which exhibited stable frequency of CD14+CD163+ cells in inflammatory peritoneal exudate with aging, the proportion of CCR7-bearing peritoneal cells, presumably immigrating inflammatory monocytes, was diminished in aged animals. Under basal culture conditions, macrophages from aged rats of both strains released less amount of TNF-α, IL-6 and IL-10, but produced more urea than cells from young strain-matched rats. However, these changes were more pronounced in peritoneal macrophages from AO rats. Additionally, age-related decrease in the frequency of TLR4-expressing cells was observed among fresh peritoneal exudate cells from AO rats. Upon LPS stimulation, the production of prototypic inflammatory cytokines (TNF-α and IL-6) was diminished in macrophages from aged AO rats, whereas aging had the opposite effect on their production in DA rat macrophages. Moreover, aging increased NO production in LPS-stimulated macrophages from DA rats, whereas urea production was enhanced in macrophages from both strains, but this increase was strikingly more pronounced in macrophages from AO rats. Collectively, results suggest that aging affects inflammatory peritoneal exudate cellular composition and macrophage proinflamatory/immunomodulatory capacity in a strain- specific manner.

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