

3rd BELGRADE EFIS SYMPOSIUM ON IMMUNOREGULATION Immunity, Infection, Autoimmunity and Aging



Hotel Izvor, Arandjelovac Spa (Belgrade) 24-27 May 2015





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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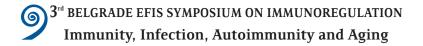
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Dragana Nikolich-Zugich - non-European Invited Speakers

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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



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	
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 immuni
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 thymicselection

12.00-12.30 Stephen Jameson (University of Minnesota, Minneapolis, MN, USA) - The transcription factor

KLF2 regulates T cell trafficking and differentiation

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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

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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

DAY 4: WEDNESDAY

07.30-08.30 Breakfast

09.30-10.00

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

 $\label{lem:continuous} \mbox{Gergely Toldi (Semmelweis University, Budapest, Hungary) - } \mbox{\it Impact of aging on calcium influx and potassium channel characteristics of T lymphocytes}$

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

Leo Joosten (University of Nijmegen, Nijmegen, The Netherlands - Trained Immunity:

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

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

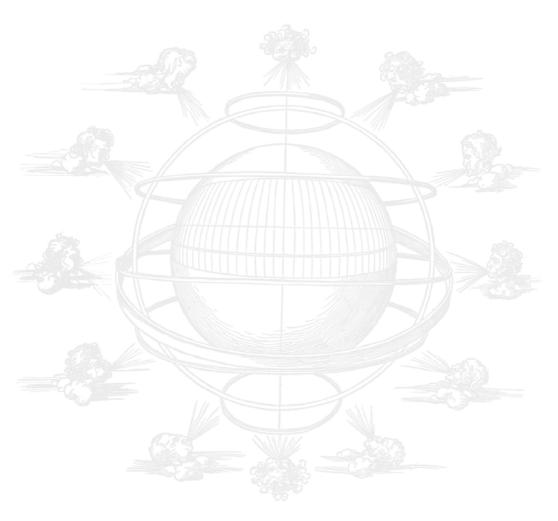
Aging affects rat inflammatory peritoneal exudate composition and macrophage inflammatory mediator production in a strain-dependent manner

Stanislava Stanojević¹, Ivana Ćuruvija¹, Veljko Blagojević¹, Ivana Vujnović¹, Raisa Petrović¹, Mirjana Dimitrijević¹, Gordana Leposavić²

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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