ISSN 0014-2980 · EJIMAF51 (Supplement S1) · Vol.51 · Supplement S1 · August 2021

50th anniversary

European Journal of Immunology

Supplement S1

www.eji-journal.eu

WILEY

DOI: 10.1002/eji.202170200

European Journal of Immunology

Abstracts of ECI 2021

6th European Congress of Immunology

1-4 September 2021

Virtual meeting

European Journal of Immunology Volume 51, Suppl. 1, August 2021

This abstract book can be searched using the PDF search function to look, for example, for the Abstract number if applicable or author name.

To cite an Abstract, please use the following format:
Abstract title. Authors. Conference: 6th European Congress of Immunology. Abstracts. Location Virtual. Date September 1-4, 2021. Eur. J. Immunol. 2021. 51, S1, page number(s). Meeting Abstract number [the Abstract number if applicable can be found above the title]

DOI: 10.1002/eji.202170200

ABSTRACT REVIEWERS

The organizers of the 6th European Congress of Immunology would like to extend their special thanks to all abstract reviewers for their contribution and time they dedicated to the success of the congress:

Adriana Narcisa Munteanu	Romania
Ahmet Eken	Turkey
Akif Turna	Turkey
Aleksandra Popov Aleksandrov	Serbia
Alexandra Siorenta	Greece
Alexandra Tsirogianni	Greece
Alisa Gruden-Movsesijan	Serbia
Amiram Ariel	Israel
Andreas Radbruch	Germany
Anita Milicic	United Kingdom
Anna Sediva	Czech Republic
Anne Caignard	France
Arpad Lanyi	Hungary
Arzu L. Aral	Turkey
Aslı Gelincik Akkor	Turkey
Aude Magerus	France
Ayça Sayı Yazgan	Turkey
Ayça Kıykım	Turkey
Ayşegül Atak Yücel	Turkey
Batu Erman	Turkey
Biljana Božić Nedeljković	Serbia
Bojan Polić	Croatia
Carsten Watzl	Germany
Ceren Çıracı	Turkey
Cezmi Akdiş	Switzerland
Danka Grcevic	Croatia
Delphine Sauce	France
Dicle Güç	Turkey
Diana Dudziak	Germany
Diğdem Yöyen Ermiş	Turkey
Djordje Miljkovic	Serbia
Dominik Filipp	Czech Republic
Duygu Sağ	Turkey
Ed Lavelle	Ireland
Edit Buzas	Hungary
Elif Karakoç Aydıner	Turkey
Erika Jensen-Jarolim	Austria
Eva Martinez Caceres	Spain
Eva Untersmayr	Austria
Gerhard Wingender	Turkey
Goran Marjanović	Serbia
Güher Saruhan Direskeneli	Turkey
Günnur Deniz	Turkey
Güneş Esendağlı	Turkey
Haluk Barbaros Oral	Turkey
Haner Direskeneli	Turkey
Hanna Jarva	Finland
Hannes Stockinger	Austria
İhsan Gürsel	Turkey
Iva Hafner Bratkovic	Slovenia
Ivan Pilipović	Serbia
Ivana Stojanovic	Serbia
Ivanka Tsacheva	Bulgaria
Jacques Nunes	France
James Brewer	United Kingdom
Jelena Djokic	Serbia
Jordi Cano Orchando	Spain
Jüergen Wittmann	Germany
Katerina Tarassi	Greece
Kingston Mills	Ireland
Krassimira Todorova	Bulgaria
Krisztina Buzas	Hungary
Lazar Popovıć	Serbia
Luis Graça	Portugal
Luke Foster	United Kingdom
Marcela Vlkova	Czech Republic
Marco A. Cassatella	Italy
Marcos Lopez-Hoyos	Spain
Marieke Van Ham	The Netherlands
Marinela Bostan	Romania
Marta Szell	Hungary
Martin Schwarzer	Czech Republic
Martina Colicchia	United Kingdom
Maxim Nosenko	Russia
Mayda Gürsel	Turkey
Michael Lohoff	Germany
Mira Barda-Saad	Israel
Micha Berger	Israel
Milada Sirova	Czech Republic
Mirjam Heemskerk	The Netherlands
Mirjana Nacka-Aleksić	Serbia
Muhlis Cem Ar	Turkey
Nada Pejnovic	Serbia
Nataša Ilić	Serbia
Nemanja Jovicic	Serbia
Noushine Mossadegh-Keller	France
Peter Heeringa	The Netherlands
Sergej Tomić	Serbia
Serkan Belkaya	Turkey
Silke Appel	Norway
Slavko Mojsilovic	Serbia
Soren Hayrabedyan	Bulgaria
Srdja Janković	Serbia
Sylvia Knapp	Austria
Şefik Alkan	Turkey
Tal Shay	Israel
Tamara Saksida	Serbia
Tanja Džopalić	Serbia
Tolga Sütlü	Turkey
Trevor Owens	Denmark
Uğur Sezerman	Turkey
Wilfried Ellmeier	Austria
Yıldız Camcıoğlu	Turkey
Zimmer Jacques	Luxembourg
Zoltán Prohászka	Hungary
Zsolt Komlosi	Hungary

DOI: 10.1002/eji.202170200

POSTER PRESENTATIONS

P-0887

Extracellular vesicles subtypes in sera of COVID-19 patients as indicators of immune dysregulation and disease severity

Maja Kosanović[1], Tobias Tertel[2], Jelena Đokić[3], Nataša Ilić[1], Dušan Radojević[3], Dejan Stevanović[4], Alisa Gruden Movsesijan[1], Bernd Giebel[2], Sergej Tomić[1]

[1]*Department for Immunology and Immunoparasitology, Institute for the Application of Nuclear Energy, University of Belgrade, Belgrade, Serbia*
[2]*Institute for Transfusion Medicine, University Hospital Essen, University of Duisburg-Essen, Essen, Germany*
[3]*Laboratory for Molecular Microbiology, Institute of Molecular Genetics and Genetic Engineering, University of Belgrade, Belgrade, Serbia*
[4]*Clinical Hospital Center Zemun, Faculty of Medicine, University of Belgrade, Belgrade, Serbia*

COVID-19 is characterized by a wide spectrum of disease severity, ranging from asymptomatic to critical symptoms, hallmarked by immune dysregulation. Despite intensive investigations, the underlying mechanisms, and indicators of COVID-19 immunopathogenesis are largely missing. Extracellular vesicles (EVs) emerged as key mechanisms of cell-to-cell communication and excellent biomarkers in many infectious and immune-related diseases. However, their role COVID-19 is largely unknown. Here we analyzed a set of clinical, biochemical and immunological markers in 46 COVID-19 patients (20 with mild symptoms, and 26 with severe symptoms) and 16 sex/age-matched healthy individuals, along with the imaging flow cytometry EVs characterization from donors' sera. We found an increased number of CD13+ EVs/ml in COVID-19 patients, and their number was significantly higher in the group of severe patients, along with the number of CD82+ EVs. Additionally, the number of CD13+ EVs positively correlated with the number of inflammatory monocytes and IL-6-producing myeloid-derived suppressor cells (MDSCs) in severe COVID-19 patients. In contrast, the patients with mild COVID-19 symptoms displayed an increased number of HLA-ABC+ EVs compared to healthy donors, and significantly higher number of CD24+ EVs, compared to severe COVID-19 patients. HLA-DR-ABC+ EVs and CD24+ EVs predicted positive outcome of COVID-19, as they negatively correlated with disease severity and accumulation of IL-10-producing MDSCs, the mediators of immune paralysis in severe COVID-19 patients. These results indicate for the first time that EVs in sera are excellent indicators of COVID-19 pathogenesis and disease progression, but the exact mechanisms underlining EVs actions in COVID-19 require further investigations.

Keywords: Biomarkers, chronic inflammation and fibrosis, endo- and exocytic vesicles in immunity

P-0888

Impaired LAIR-1-mediated immune control due to collagen degradation in systemic sclerosis

Tiago Carvalheiro[1], Wioleta Marut[1], M Inês Ramos[2], Samuel García[3], Devan Fleury[4], Alsya Affandi[1], Aniek S. Meijers[1], Barbara Giovannone[5], Ralph G. Tieland[1], Eline Elshof[2], Andrea Ottria[1], Marta Cossu[1], Matthew L. Meizlish[6], Tineke Veenendaal[7], Meera Ramanujam[4], Miguel Moreno García[4], Nalan Liv[7], Timothy R.D.J. Radstake[1], Linde Meyaard[2]

[1]*Center for Translational Immunology, Department of Rheumatology & Clinical Immunology, University Medical Center Utrecht, Utrecht, The Netherlands*
[2]*Center for Translational Immunology, University Medical Center Utrecht; Oncode Institute, Utrecht, The Netherlands*
[3]*Center for Translational Immunology, Department of Rheumatology & Clinical Immunology, University Medical Center Utrecht, Utrecht, The Netherlands; Rheumatology & Immuno-mediated Diseases Research Group (IRIDIS), Galicia Sur Health Research Institute (IIS Galicia Sur), SERGAS-UVIGO, Vigo, Spain*
[4]*Boehringer Ingelheim, Ridgefield, CT, USA*
[5]*Center for Translational Immunology, Department of Dermatology, University Medical Center Utrecht, Utrecht, The Netherlands*
[6]*Howard Hughes Medical Institute, Department of Immunobiology, Yale University School of Medicine, New Haven, CT, USA*
[7]*Department of Cell Biology, Centre for Molecular Medicine University Medical Center Utrecht, Utrecht, The Netherlands*

Fibrosis is characterized by the production and deposition of excessive extracellular matrix (ECM) products such as collagen. Systemic sclerosis (SSc), is a potentially fatal disease characterized by immune dysregulation and fibrosis of the skin and internal organs. LAIR-1 is an inhibitory collagen receptor highly expressed on immune cells in these tissues. We show that LAIR-1 deficient mice have increased bleomycin-induced skin fibrosis, supporting a protective role for LAIR-1 in controlling fibrosis. In SSc patients, LAIR-1 expression and function is intrinsically normal. However, the ECM produced by fibroblasts of SSc patients contains high levels of collagen degradation products that can act as decoy ligand and impair LAIR-1 mediated signalling. These collagen degradation products are dependent of matrix metalloproteinases and platelet-derived growth factor (PDGF) receptor signalling. We conclude that LAIR-1 represents a control mechanism in tissue remodelling and that the absence of LAIR-1 mediated control in SSc patients results in a perpetuating loop in which fibrosis continues. The presence of functional LAIR-1 in SSc patients provides a therapeutic opportunity that holds promise for disease control.

Keywords: Checkpoint inhibition, chronic inflammation and fibrosis, tissue damage and repair

P-0889

Multiple effects of *Alchemilla vulgaris* L. extract on melanoma cells and tumor microenvironment

Sanja Jelača[1], Dijana Drača[1], Zora Dajić Stevanović[2], Ivan Jovanović[3], Sladjana Pavlović[3], Nevena Gajović[3], Sanja Mijatović[1], Nebojša Arsenijević[3], Danijela Maksimović Ivanić[1]

[1]*Department of Immunology, Institute for Biological Research "Siniša Stanković" – National Institute of Republic of Serbia, University of Belgrade, Belgrade, Serbia*
[2]*Faculty of Agriculture, University of Belgrade, Belgrade, Serbia*
[3]*Center for Molecular Medicine and Stem Cell Research, Faculty of Medical Sciences, University of Kragujevac, Kragujevac, Serbia*

Several ethnobotanical reports on *Alchemilla vulgaris* L. pointed out diverse biological properties against problems such as dysmenorrhea, pruritus vulvae, menopausal complaints as well as related diseases in women. Also previous studies have shown that *Alchemilla vulgaris* L. extracts are exhibiting antiinflammatory, antioxidant, wound healing and neuroprotective activity. The aim of this study was to evaluate the direct effect of *Alchemilla vulgaris* L. ethanol extract against melanoma cells *in vitro* and *in vivo*, as well as its effect on tumor microenvironment *ex vivo*. This study was performed on two different mouse melanoma cell lines, B16 and B16F10, and on syngeneic mouse melanoma model *in vivo*. Obtained results revealed dose-dependent decrease of cell viability after 72 h- treatment with *Alchemilla vulgaris* L. extract. The observed effect was followed by loss of dividing potential in both tested cell lines. In parallel with this, certain percentage of B16F10 cells was subjected to programmed cell death in a caspase independent manner while in B16 cells estimation of the presence of autophagosomes by flow cytometry has shown that autophagy is occurring after the treatment and it is shown to be mechanism of death. Concerning *in vivo* studies *Alchemilla vulgaris* L. extract significantly reduced tumor growth in B16 melanoma model partly through stimulation of antitumor immune responce. It altered dendritic cells phenotype which activated cytotoxic and CD4+ T lymphocytes to successfully destroy tumor cells. In summary, these data indicate that *Alchemilla vulgaris* L. is valuable of further investigation in the field of experimental oncology.

Keywords: Cancer immunology, cell death, *in vivo* tumor models, microenvironment