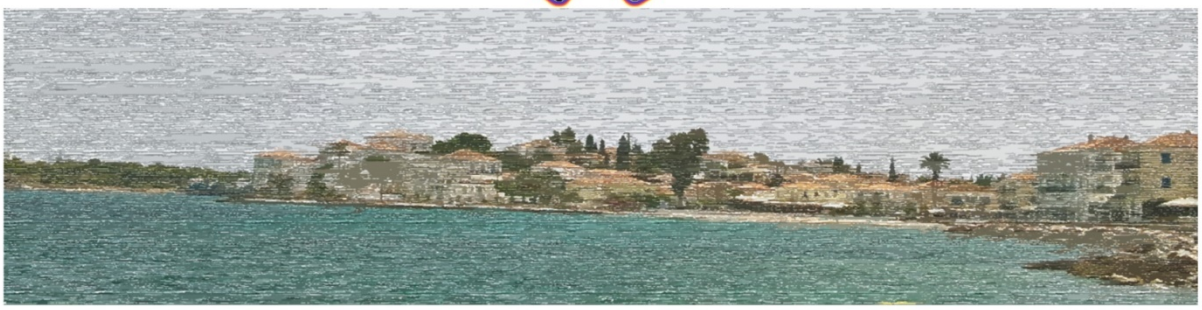
Book of Abstracts

Joint IUBMB/FEBS Advanced Lecture Course

Molecular targets for anti-aging interventions

26 Sept. – 01 Oct. 2022. Spetses Island, Greece



SPONSORS:

1. Federation of European Biochemical Societies (FEBS), https://www.febs.org/
2. International Union of Biochemistry and Molecular Biology (IUBMB), https://iubmb.org/

3. Institute for Biological Research "Siniša Stanković", National Institute of Republic of Serbia, University of Belgrade (IBISS), https://www.ibiss.bg.ac.rs/index.php/en/

4. Mechanisms of Ageing and Development (MAD), https://www.journals.elsevier.com/mechanisms-of-ageing-and-development

5. The FEBS Open Bio, https://febs.onlinelibrary.wiley.com/journal/22115463

6. Hellenic Society for Biochemistry and Molecular Biology (HSBMB), https://www.eebmb.gr/index.php/en

SCIENTIFIC COMMITTEE:

Dr Aleksandra Mladenovic

Dr Efstathios Gonos

Dr Silva Katusic

Dr Alexandra Newton (IUBMB)

Dr Beata Vertessy

Dr Selma Kanazir

Dr Smilja Todorovic

Dr Marianna Kapetanou

SCIENTIFIC COMMITTEE:

Dr Aleksandra Mladenovic

Dr Efstathios Gonos

Dr Silva Katusic

Dr Alexandra Newton (IUBMB)

Dr Beata Vertessy

Dr Smilja Todorovic

Dr Marianna Kapetanou

SECRETARIES:

Dr Smilja Todorovic

Dr Marianna Kapetanou

SPEAKERS:

Aleksandra Mladenovic, Institute for Biological Research "Sinisa Stankovic", Belgrade, Serbia

Alexandra Newton, IUBMB Speaker, University of California at San Diego, La Jolla, CA, USA

Moussa Youdim, Special guest, Professor Emeritus, Rappaport Faculty of Medicine at the Technion – Israel Institute of Technology

Beata Vertessy, FEBS Speaker, Hungarian Academy of Sciences, Institute of Enzymology, Budapest, Hungary

Bertrand Friguet, Sorbonne Université, Paris, France

Cláudia Nunes dos Santos, CEDOC - Centro de Estudos de Doenças Crónicas, NOVA Medical School, Universidade Nova de Lisboa, Portugal

Claudio Franceschi, Università di Bologna, Bologna, Italy

Dan Ehninger, German Center for Neurodegenerative Diseases (DZNE), Bonn, Germany

Efstathios S. Gonos, National Hellenic Research Foundation, Athens, Greece

Ilaria Bellantuono, UK Centre for Integrated Research into Musculoskeletal Ageing (CIMA), Sheffield, UK

Irene Diaz-Moreno, Instituto de Investigaciones Químicas (IIQ), Universidad de Sevilla – CSI, Sevilla, Spain

Jan H.J. Hoeijmakers , Dept of Molecular Genetics, Rotterdam, The Netherlands

João Laranjinha, Faculty of Pharmacy, University of Coimbra, Coimbra, Portugal

Richard Faragher, Centre for Stress and Age-Related Disease, University of Brighton, UK

Selma Kanazir, President of the Serbain Neuroscience Society

Silva Katusic Hecimovic, Rudjer Boskovic Institute, Zagreb, Croatia

Varvara Trachana, Faculty of Medicine, School of Health Sciences, University of Thessaly, Larissa, Greece

Path to healthy aging: assessment of different dietary restriction protocols through behavioral and frailty measurements

S. Todorovic[I], A. Mladenovic, M. Prvulovic, D. Milanovic, V. Simeunovic, M. Jovic, S. Sokanovic, A. Vukojevic

[I]Institute for Biological Research “Sinisa Stankovic”, National Institute of Republic of Serbia, University of Belgrade, Belgrade, Serbia

Aging is an inevitable, complex and dynamic process of natural change, leading to deleterious age-related modifications. Still, the aging process can be modified by lifestyle interventions, like dietary restriction (DR). Although DR is a proven experimental paradigm for lifespan and healthspan extension, the impact of the type, onset and duration of DR is still debatable. In order to test different dietary types, we used frailty as a tool for detecting DR outcomes throughout aging. In this report, we describe that different dietary protocols have various impact on age-related behavioral parameters and frailty status.

We exposed male Wistar rats of various age to ad libitum (AL) or DR (60% of AL daily intake) feeding regimens with different onsets. The effect of DR on locomotor activity, memory and learning was examined in 12-, 18- and 24-month-old animals using open field (OF) and Y maze test. We used behavioral data to create unique frailty score (FS) and determine frailty status in those animals.

Our results indicated that various durations and onsets of DR can alter the course of aging, with the life-long DR responsible for the most profound effect. Shorter duration/later onset of DR had minor or in some cases even detrimental impact on behavior and frailty during aging.