

POSTERS

Table of Contents

POSTERS – RESEARCH

69	Cancer and metastasis
118	Neurodegeneration and regeneration
137	Diabetes and obesity
146	Cardiovascular diseases
153	Ageing
156	Host–pathogen interactions
167	Looking for new antibiotics
175	Molecular evolution
177	Microbial metabolism
185	Human microbiome
186	Cell division and cell cycle regulation
187	Apoptosis
191	Molecular immunology
201	Cell signalling

222	Proteins
267	Lipids
271	Saccharides
272	DNA and RNA
287	Metabolism and metabolic regulation
302	Food and nutrition in biochemistry
309	Sensors and nanotechnology
315	Synthetic biology
316	Genomics
321	Proteomics
324	Systems biology
326	Atomic and molecular imaging
327	Cellular imaging
328	Quantitative analysis of bioimages

POSTERS – EDUCATION

329	Undergraduate teaching/Learning
334	Postgraduate teaching/learning
335	Faculty development

Abstracts submitted to the virtual The Biochemistry Global Summit (25th IUBMB Congress, 46th FEBS Congress and 15th PABMB Congress) from 9th to 14th July 2022 and accepted by the Congress Organizing Committee are published in this Supplement of *FEBS Open Bio*. Late-breaking abstracts are not included in this supplement. The abstracts are available as two PDF files: Talks (Plenary Lectures, Symposia and FEBS Special Sessions) and Posters.

About these abstracts

Abstracts submitted to the Congress are **not peer-reviewed**. In addition, abstracts are published as submitted and are **not copyedited** prior to publication. We are unable to make **corrections of any kind** to the abstracts once they are published.

Indexing

Abstracts published in *FEBS Open Bio* Supplement for The Biochemistry Global Summit will be included individually in the Conference Proceedings Citation Index published by Web of Science.

How to cite these abstracts

AuthorOne, A., AuthorTwo, B. (2022). Abstract title. *FEBS Open Bio*, 12: Abstract number*. doi:10.1002/2211-5463.13440

* Each poster has been given a unique number beginning with the letter P; the next part relates to the session in which the poster will be presented (see p.68 for key).

P-01.1	Cancer and metastasis	P-04.3	Saccharides
P-01.2	Neurodegeneration and regeneration	P-04.4	DNA and RNA
P-01.3	Diabetes and obesity	P-04.5	Metabolism and metabolic regulation
P-01.4	Cardiovascular diseases	P-05.1	Food and nutrition in biochemistry
P-01.5	Ageing	P-05.2	Sensors and nanotechnology
P-02.1	Host–pathogen interactions	P-05.3	Synthetic biology
P-02.2	Looking for new antibiotics	P-06.1	Genomics
P-02.3	Molecular evolution	P-06.2	Proteomics
P-02.4	Microbial metabolism	P-06.3	Systems biology
P-02.5	Human microbiome	P-07.1	Atomic and molecular imaging
P-03.1	Cell division and cell cycle regulation	P-07.2	Cellular imaging
P-03.2	Apoptosis	P-07.3	Quantitative analysis of bioimages
P-03.3	Molecular immunology	P-E-01	Undergraduate teaching/Learning
P-03.4	Cell signalling	P-E-02	Postgraduate teaching/learning
P-04.1	Proteins	P-E-03.01	Faculty development
P-04.2	Lipids		

P-06.3-003**Estimation of diagnostic value of serum tTg antibody levels in Celiac disease confirmation consistent with histological discrepancies**

E. Hilal^{1,2}, R. Ayash¹, S.P. Syatkin², I.Z. Eremina², E.V. Mitina², A.M. Orlova², E.M. Zheludova², V.M. Bothey², O.B. Savrova², A. HILAL^{2,3}, D. Zhdanov^{2,3}

¹International University for Science and Technology (IUST University), darra, Syria, ²Peoples' Friendship University of Russia (RUDN University), Moscow, Russia, ³Orekhovich Institute of Biomedical Chemistry, Moscow, Russia, Moscow, Russia

The aim of study was to show the correlation between tTg levels and degrees of duodenal damage. B, by reviewing files of patients registered in GI clinic in Children's Hospital and adult outpatients from private clinics. Files included tTg IgA titres, pathology reports of duodenal biopsy according to Marsh classification. Patients group (adults and children) n = 100 Control group n = 30 healthy adults and healthy children. We have found that the Mean tTg levels in patients with celiac disease were more than 11 times the upper limit range of normal range. Our study concluded that severity of elevation serum tTg antibodies concomitant with diagnostic symptoms as confirmation for celiac disease incidence. Therefore, tTg test can be applied for diagnosis of celiac disease in children and adults, without duodenal biopsy when tTg titres are more than 10 fold of upper limit of normal range associated with clinical symptoms. Funding: The work was performed in the framework of the Russian Federation fundamental research program for the long-term period from 2021-2030.

P-06.3-004**Sex steroid hormones status influence on antidepressant pharmacotherapy effect in male and female patients**

B. Pejuskovic¹, M. Lero², J. Djekic², G. Nikolasevic³, A. Dobrosavljevic³, J. Petrovic³, V. Pesic³

¹University of Belgrade School of Medicine Institute of Mental Health, Belgrade, Serbia, ²Institute of Mental Health, Belgrade, Serbia, ³Belgrade University Faculty of Pharmacy, Belgrade, Serbia, Belgrade, Serbia

Depression causes immense burden on health care systems worldwide with two times higher prevalence in women. However, both male and female patients are treated with antidepressants under same protocols. As it was demonstrated that estrogen has a prodepressant and testosterone an antidepressant affect, it is reasonable to assume that pharmacotherapeutic effect might depend also on sex hormones status. The aim of this pilot study was to explore hormonal status of female and male patients upon hospitalization on occurrence of depressive episode and to correlate it with pharmacotherapy effect after four weeks of therapy. Subjects were 42 patients, 14 males, 14 females in the first (follicular) phase of menstrual cycle and 14 females in the second (luteal) phase of menstrual cycle upon hospitalization. The Hamilton scale was used to determine degree of depressive state upon hospitalization an after 28 days. At both time points, blood was sampled and level of testosterone and estrogen for male and estrogen, progesterone and testosterone for female patients was analysed. Results of the study showed that antidepressant effect

calculated as a difference in Hamilton scale was highest in male group of patients and significantly higher than in women in the second phase of the cycle (10.4 vs 8.1). This correlated with increase of testosterone in male patients during four weeks treatment (12.08 vs. 9.46), while there was no significant change in the level of testosterone in both female groups of patients. Furthermore, in female patients in the luteal phase of the cycle, with lowest response to antidepressants, both estrogen and progesterone were significantly reduced during four weeks of treatment. In conclusion, results of our pilot study suggest sex differences in response to antidepressant therapy and level of hormonal status should be evaluated for better personalized pharmacotherapy.

P-06.3-005**Comparative characteristics of the treatment of acute pancreatitis in rats using native and preconditioned human umbilical cord MSCs with hydrogen peroxide**

P. Pikus^{*1}, S. Rymar^{*2}, A. Pustovalov³, V. Kordium²

¹Department of Cell Regulatory Mechanisms Institute of Molecular Biology and Genetics National Academy of Sciences of Ukraine, Kyiv, Ukraine, ²Department of Cell Regulatory Mechanisms Institute of Molecular Biology and Genetics NASU, Kyiv, Ukraine, ³Educational and Scientific Centre "Institute of Biology and Medicine" Taras Shevchenko National University of Kyiv, Kyiv, Ukraine

Acute pancreatitis (AP) is serious disorder requiring emergency hospitalization. There are currently no effective therapies for AP. MSCs can be a potential candidate for the treatment of this disease due to their immunomodulatory properties. The aim of this study was to compare the therapeutic effect of the transplantation of native MSCs and MSCs preconditioned with H₂O₂ in the rat model of AP. Wistar rats were randomized into four groups: a negative control group received normal saline; a positive control group obtained the intraperitoneal injection of L-arginine at a dose (350 mg/100 g of body weight) within 1 h interval in between; and two of experimental groups were injected intraperitoneally with native MSCs and preconditioned MSCs with 30 µmol H₂O₂ second passage at a dose (6–7x10⁶ cells/kg of rat weight) 72 h after AP induction. Rats were sacrificed after 7 days, and the pancreatic tissues and blood were collected. Biochemical, histological and histochemical methods were used to determine pathological changes in the rat pancreas. Three day after the AP induction, the amylase level increased by 5 times to compare negative group. The size of fibrotic area was 5 times larger than the negative group. Schiff's reaction shows that the pancreas of positive group has a low level of insulin synthesis which leads to acute inflammation. 7 days after transplantation of native and preconditioned MSCs into the rats with induced AP, the amylase level decreased 3 times after MSC transplantation and decreased to normal after preconditioned MSCs. The size of fibrotic area was almost returned to norm after the injection of preconditioned MSCs. Other morphometric and histochemical parameters of pancreas almost return to a normal level. The results of this study show that the transplantation of native MSCs to the rats with AP led to the recovery of pancreas, but the injection of preconditioned MSCs with H₂O₂ significantly improved the therapeutic efficacy of MSC therapy. *The authors marked with an asterisk equally contributed to the work.