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41ST FEBS CONGRESS

Molecular and Systems Biology for a Better Life

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Ephesus/Kuşadası, Turkey

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Abstracts submitted to the 41st FEBS Congress, which was planned for Kuşadası, Turkey from 3rd to 8th September 2016, and accepted by the Congress Organizing Committee are published in this Special Issue of The *FEBS Journal*. Unfortunately, the Congress was cancelled by FEBS after the excellent scientific programme was compromised by an insufficient number of confirmed speakers, and so the authors of these abstracts were not able to present their work at the event*. Late-breaking abstracts and abstracts withdrawn after Congress cancellation are not included in this issue. The abstracts are available below as five PDF files: Plenary Lectures, FEBS Special Sessions, Symposia, Speed Talks and Poster Sessions.

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Abstracts submitted to the Congress are **not peer-reviewed**.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 *The FEBS Journal* Special Issue for the 41st FEBS Congress will be included individually in the Conference Proceedings Citation Index published by Web of Science.

How to cite these abstracts

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* An optional closed online presentation opportunity of short duration on the Congress website was offered after Congress cancellation and may be taken up by some abstract authors.

** The Abstract number can be found atop each abstract's title in the PDF file.

*** DOIs are as follows:

Plenary lectures:	10.1111/febs.13803
FEBS Special Sessions:	10.1111/febs.13804
Symposia:	10.1111/febs.13805
Speed Talks:	10.1111/febs.13807
Posters:	10.1111/febs.13808

All cell lines were grown in DMEM. EMT status of CRC cell lines were assessed by investigating canonical markers of EMT. Cytokine/chemokine expression of CRC cells was performed using R&D systems antibody arrays and validated using CCL5 sandwich ELISA and RT-PCR. The mechanism of action of ZEB1/2 on *CCL5* promoter has been studied by luciferace assay and ChIP. CCL5 coding region was cloned into pCDNA3.1 and stably transfected into DLD-1 cells. CCL5 deficient CT26 cells were generated using lentivirual shRNA transduction. Cells over-expressing or knock/down CCL5 were injected orthotopically into mice. T lymphocyte (TIL) infiltration in respect to CCL5 and SIP1 expression was studied using IHC or flow cytometry.

EMT status catagorised 13 CRC cell lines into epithelial, intermediate epithelial, intermediate mesechymal and mesenchymal. Cytokine/chemokine antibody arrays showed a significant increase in CCL5 in induced DLD-SIP1 cells. ELISA, Multiplex assays and RT-PCR confirmed a significant increase of secreted CCL5 in the induced DLD-SIP1 cells as well as mesenchymal CRC cells as compared to epithelial ones ($p = 0.027$). Promoter studies showed that ZEB1/2 bind to *CCL5* promoter and and activate *CCL5* gene expression. No metastasis was observed for DLD-1 cells overexpressing CCL5 but significant alterations of tumour associated lymphocytes were identified in syngeneic orthotopic CRC models.

Our data shows that CCL5 is up-regulated by EMT inducing transcription factor SIP1, and mesenchymal (metastatic) CRC cells secrete significantly more CCL5 compared to epithelial (non-metastatic) ones. CCL5 did not induce EMT *per se* but abundant secretion of CCL5 by metastatic CRC cells was a crucial regulator of immune infiltrate in CRC. Inhibiting CCL5 in metastatic CRC may have a therapeutic potential.

P-MIS-098
Vitamin E (α-tocopherol) contents and antimutagenicity potentials Talbina (*Hordeum vulgare* L.)

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Barley (Hordeum vulgare L.) belongs to the grass family, Poaceae (Gramineae). It is the fourth most important cereal crop after wheat, maize and rice and is among the top ten crop plants in the world. Talbina was used to be recommended for the sick and for one who is grieving over a dead person. Talbina is made by adding one or two tablespoon of barley flour (must be 100 percent wholegrain barley flour) to one-and-a-half cups of water and placed on low heat for 10–15 minutes (optional: add milk or yoghurt and sweeten with honey). The main objectives of this investigation were determine the α-tocopherol contents and antimutagenicity activity of Talbina (Hordeum vulgare L.). Our results showed that the total tocopherol content was in the range of 0.25 to 1.03 μmol/g FW. Talbina extract was shown to have greater antimutagenic activity observed in the 2500 μg/plate concentration S. typhimurium TA98. At all the doses antimutagenic response was significant at ($p < 0.01$) against both the strains with a percent mutagenicity decrease from 40 to 25 for TA98 followed by TA100 with percent antimutagenicity from 30 to 11. The results of the study concluded that Talbina is a better antimutagenic agent than vitamin E and combination of vitamins did not produce any synergistic activity.

P-MIS-099
Biological properties of some novel thiadiazole compounds

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The compounds containing thiadiazoles have diverse applications as antifungals, anticancer agents, antibacterial, antiinflammatory drugs, antidepressants and carbonic anhydrase inhibitors according to literature. In this study some novel thiadiazole compounds [(1,4,10,13)-tetrathia[4.4](2,5)-1,3,4-thiadiazolophane; (4,16)-dioxo-1,7,13,19)-tetrathia[7.7](2,5)-1,3,4-thiadiazolophane; (4,7,19,22)-tetraoxo-(1,10,16,25)-tetrathia[10.10](2,5)-1,3,4-thiadiazolophane and (4,7,10,22,25,28)-hexaoxo-(1,13,19,31)-tetrathia [13.13] (2,5)-1,3,4- thiadiazolophane] were used to evaluate the cytotoxicity on healthy human lymphocytes and the antibacterial activities. Cytotoxicity tests were perfomed using MTS Assay and the trypan blue test. Cells were incubated with the compounds for 72 hours. At the end of the each 24 hour, cell vitality was assessed by measuring the absorbance (490 nm) of each well using a microplate reader for MTS assay. In addition, viability percents of the cells were determined after trypan blue test. As a result, the compounds showed cytotoxicity in a dose dependent manner. For the concentrations of 1:1000 of 0.5 mg/mL, the cytotoxic effect was eliminated. Also, antioxidant capacity was determined using 2,2-diphenyl-1-picrylhydrazyl (DPPH) reagent. Moreover, the antibacterial activities of the compounds were analyzed using a microdilution test against *E. coli* and *S.aureus*. Compounds having various concentrations showed different antibacterial effects against these two bacteria.

P-MIS-101
Arabidopsis thaliana ecotypes vary in their ability to utilize organic P substrates

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Insufficient quantity of inorganic phosphorus in soil is an ever-growing problem that affects many fields of agriculture. Unlike inorganic phosphates, organic phosphorus compounds are very common in many soil types, but plants are often unable to efficiently utilize them. To better characterize the extent of natural variation in the ability of the model plant *Arabidopsis thaliana* to grow on organic phosphorus compounds, we grew 19 Arabidopsis ecotypes on several organic and inorganic sources of phosphorus. Plants were grown in liquid or solid media containing Na-phosphate, phytate and ATP as the sole supply of phosphorus or in absence of any phosphorus source. After several weeks of growth, plants were assayed for changes in their morphological and physiological characteristics.

Phytate was shown to be the least preferred source of phosphorus compared to inorganic phosphate and ATP. The rate of biomass accumulation in all ecotypes decreased in the following order from inorganic phosphate to ATP to phytate. Lateral root formation was markedly reduced in the absence of any phosphorus source or in the presence of phytate. We also showed that phosphomonoesterase activity in intact roots increased when plants were grown on ATP and phytate. Overall phosphorus content in leaves and roots was similar when plants were grown on ATP or inorganic phosphate, but it was markedly reduced on

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