

FEBS openbio

Volume 13 Supplement 2

July 2023

ISSN 2211-5463

Together in bioscience for a better future

8-12
JULY

FEBS 2023

THE 47TH FEBS CONGRESS

TOURS, FRANCE



WILEY

febsopenbio.org

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Abstracts submitted to the 47th FEBS Congress from 8th to 12th July 2023 and accepted by the Congress Management Board 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 Speed Talks) 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Abstracts submitted to the Congress are not peer-reviewed.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 47th FEBS Congress will be included individually in the Conference Proceedings Citation Index published by Web of Science.

How to cite these abstracts

AuthorOne, A., AuthorTwo, B. (2023). Abstract title. *FEBS Open Bio*, 13: Abstract number*. doi:10.1002/2211-5463.13646

* 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.62 for key).

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is essential to maintaining natural biodiversity. However, the number of colonies is decreasing for the last few decades. Polyamines, putrescine, spermidine and spermine, are ubiquitous polycations, involved in a wide range of cellular processes such as cell growth, gene regulation, immunity, and regulation of lifespan. Spermidine, named longevity elixir, has been most analyzed in the context of aging. Spermidine supplementation was previously showed to affect survival and health of many organisms such as *D. melanogaster* and *C. elegans*. One of the several proposed mechanisms behind spermidine actions is antioxidative activity. In the present study, we investigated the influence of spermidine dietary supplementation on survival and lifespan of honey bees. We tested three spermidine concentrations (0.01, 0.1 and 1 mM) that were mixed with 50% sucrose as the basic feeding solution and showed that 0.1 and 1 mM spermidine significantly increased survival rate and average lifespan of honey bees compared with control. Further, we measured malondialdehyde (MDA) level and performed ferric reducing antioxidant power (FRAP) assay in honey bees whose nutrition was supplemented with these two spermidine concentrations, for 10 and 17 days. Our results showed that exogenously added spermidine at both concentrations reduced oxidative stress and increased antioxidant capacity after 17 days of supplementation. These results point to antioxidative action of spermidine, which is in accordance with previous studies in mice, yeast, and *D. melanogaster*. To our knowledge, this is the first study on dietary spermidine supplementation in reference to honey bee longevity.

P-08.3-06

Assessment of short-term and long-term risks for the population of the Almaty region for long time exposed to banned pesticides in the food chain

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The problem of obsolete pesticides contaminating the human food chain has become very acute for Kazakhstan. The aim of this study was to assess the long-term and short-term health risks for the population of 5 villages (Kyzylkairat, Beskainar, Belbulak, Amangeldy, Enbekshy) of the Almaty region, on the territories of which, the abandoned warehouses with unutilized and prohibited pesticides were found. The health status of the population living close to the former pesticide warehouses was investigated. The cardiovascular and allergic disease incidences were the most indicative for surveyed cohorts. In these villages, samples of plant (apples, pears, peppers, cucumbers, tomatoes) and animal (meat, milk) origin were taken and analyzed (annually during 3 years). The chemical analysis revealed the contents of 24 types of pesticides in food products, which were divided into 6 groups according to the main pesticides and their decay products. Based on the pesticide contents, short-term (acute) and long-term (chronic) risks were calculated for inhabitants of the surveyed localities. Acute/short-term risk (aHQ) was calculated based on estimated short-term intake (ESTI) and acute reference dose (ARfD). Chronic/long-term risk (cHQ) was assessed using estimated daily intake (EDI) and acceptable daily intake (ADI). The risk assessment revealed that the greatest risk was associated with the consumption of pears, cucumbers, bell peppers, milk and meat, since these products have an unacceptably high content of

the aldrin, endosulfan, and heptachlor groups, and were characterized by a high hazard index. The research was performed in the frame of the project AP09260631 'Study of gene polymorphisms responsible for antioxidant protection and immune response in individuals exposed by pesticides for a long time'. *The authors marked with an asterisk equally contributed to the work.

P-08.3-07

Stabilization of C-phycoerythrin in alginate beads

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C-Phycocyanin (C-PC), the major protein of cyanobacteria *Arthrospira platensis*, is a phycobiliprotein with potent biological activity. It has several beneficial effects, including anti-oxidant, anti-inflammatory, immunomodulatory, and anti-cancer. A significant challenge for the broader application of C-PC in the food industry is its stability in food processing conditions, such as increased light exposure, temperature, and high pressure and drying. This work aimed to investigate if the immobilization of C-PC onto alginate beads could improve its stability. C-PC was immobilized by dropping the solution of C-PC and 1% alginate (final concentration) in the solution of 2% CaCl₂. Both protein/alginate mixture and CaCl₂ were kept at pH 4. Immobilized C-PC was treated for 30 min at 65°C, by high pressure up to 4500 bar, and incubated under light exposure for a month. Alginate beads with immobilized C-PC were also left to dry in the fridge and kept for a month. C-PC was extracted from alginate beads by immersing them in 20 mM phosphate buffer, pH 7. The stability of C-PC was assessed by a color change and UV-VIS spectroscopy. Immobilized C-PC was stable under all tested conditions, with only small aggregation and color change appearing after high-pressure treatment. Immobilization of C-PC by alginate thus shows promise for its efficient stabilization under food processing conditions.

P-08.3-08

Impact of food-derived stilbenoids on the defensive response of dendritic cells to bacterial infection

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Stilbenoids are a class of food-derived anti-inflammatory and antioxidant compounds, that include resveratrol. Differently to resveratrol, the action of most other stilbenoids is much less characterized, in particular for what attains the relationships occurring among chemical structure, antioxidant capacity, and their activity as inhibitors of specific enzymes or as potential