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Abstracts

Guest Editors

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Conclusions: We demonstrated that ESG inhibited allergic and inflammatory response in antigen-stimulated basophilic and mast cells. ESG might be a beneficial food to inhibit type I allergy.

Keywords: Glycogen, Histamine, TNF- α . RBL-2H3. Caco-2 cells.

Further collaborators: Yoko Yamashita

144/1502

EFFECT OF DIFFERENT AMYLOSE CONTENT ON THE QUALITY OF FUNORI (*GLOIOPELTIS FURCATA*) ADDED RICE NOODLES

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Background and objectives: Rice noodles are good foods for allergy patients of wheat flour, because of the absence of gluten in rice flour. However, it is difficult to make the rice noodles without gluten. In our previous study, adding Funori (*Gloiopeltis furcata*), a kind of seaweed, to the rice flour as a liaison was able to make the noodles using 100% rice flour. Recently, several studies have reported that the high-amylose rice inhibits early postprandial increment of blood glucose and insulin levels. In this study, we investigated the effect of different amylose content in the rice flour on the quality of rice noodles.

Methods: Two types of rice flour, an intermediate-amylose rice “Koshihikari” (KH; the most prevalent rice in Japan) and a high-amylose rice “Koshinokaori” (KK), were used to make rice noodles. Rice noodles were prepared with 250g of rice flour, 10g of Funori, and water using automatic noodle maker (PHILIPS HR2365/01). Physical properties, color (L^* , a^* , b^*), and sensory attributes were measured after making and boiling of noodles.

Results: In the noodle making process, the optimum quality of rice noodles were obtained at 90mL (76%) of adding water for KH and at 110mL (84%) for KK. Difference of amylose content and particle diameter of rice flour may influence for the water absorption of rice flour during noodle making. Both noodles showed a light green color derived from Funori heated by copper pan. In case of physical properties of raw noodles, KK noodles showed higher value for hardness and elasticity than KH noodles. After boiling of noodles, lower values for hardness were observed in both of noodles. KK noodles were preferred at elasticity to KH noodles in the sensory evaluation of the noodles.

Conclusions: The high-amylose rice is generally unsuitable to Japanese taste as cooked rice. However, these findings showed that the adequacy of high-amylose rice as rice noodles. More investigation of human study is necessary to evaluate high-amylose rice noodles as the effective food for glycemic control.

Keywords: Rice flour, Rice noodles, High-amylose rice, Funori.

144/1511

IN VIVO STUDY OF ANTIOXIDANT CAPACITY OF CHIA (*SALVIA HISPANICA* L.) IN *SACCHAROMYCES CEREVISIAE*

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Background and objectives: Chia is an edible oil seed of the plant *Salvia hispanica* L. Its consumption is recommended because of its high oil content (25-38%) rich in omega-3 (50-67% α -linolenic acid), proteins of High biological value, natural antioxidants, vitamins, minerals, dietary fiber (30-54%) and bioactive compounds such as phytosterols. The present study has focused on aspects related to the antioxidant potential of chia. It is known that oxidative stress is associated with various human pathologies. The WHO recommends the daily consumption of antioxidants through diet to prevent or attenuate these pathologies. The antioxidant power of chia seeds has been studied in vitro by several authors, however there is a great lack of knowledge about its antioxidant promoter capacity in whole organisms.

The general objective of the present investigation is to study the protective antioxidant capacity of chia polyphenolic extracts at different concentrations using the yeast *Saccharomyces cerevisiae* as model organism.

Methods: A method adapted to microtiter plates is used to monitor yeast growth after culture pre-incubation with food ingredients and exposure to oxidative stress by hydrogen peroxide. Polyphenolic extracts of chia at different concentrations range from 10 mg/L to 1200 mg/L were tested.

Results: As a result, the polyphenolic extracts showed a significant protective effect against oxidative stress. This effect was more evident in moderate stress conditions and increased with polyphenol concentration, the greatest effect were obtained at the concentration of 1200 mg/L.

Conclusions: In conclusion, the present work completes the information regarding the polyphenol content of chia when showing their ability to promote the antioxidant protective effect in a complete model such as yeast.

Keywords: Oxidative stress, Yeast, Chia, Polyphenols, Antioxidant capacity.

Further collaborators:

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Reference

Title: *In vivo* study of antioxidant capacity of chia (*Salvia hispanica* L.) in *Saccharomyces cerevisiae*

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Background and Objectives:

Chia is an edible oil seed of the plant *Salvia hispanica* L. with a remarkable nutritional content and health benefits. The present study has focused on aspects related to its antioxidant potential; the protective antioxidant capacity of chia polyphenolic extracts at different concentrations using the yeast *Saccharomyces cerevisiae* as model organism has been studied.

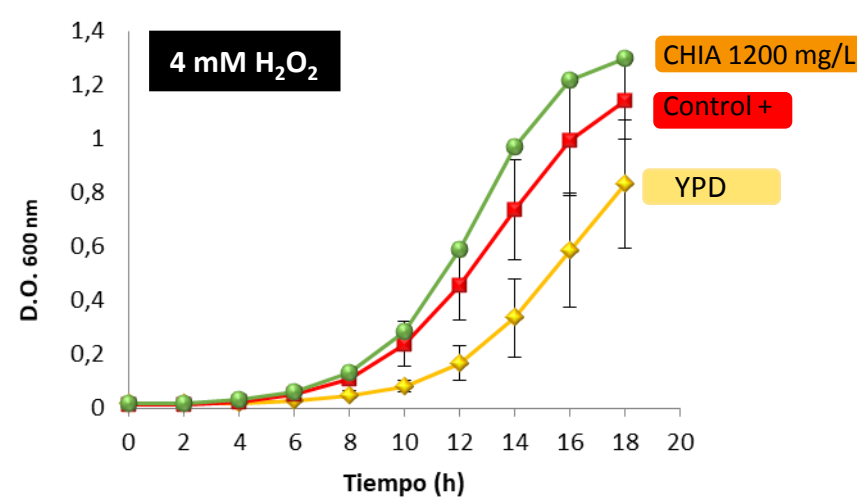
Methods:

A method adapted to microtiter plates is used to monitor yeast growth after culture pre-incubation with food ingredients and exposure to oxidative stress by hydrogen peroxide (0, 0.5 and 4 mM). Polyphenolic extracts of chia at 6 concentrations, range from 10 mg/L to 1200 mg/L, were tested by observing their effect on yeast growth recover.

Results:

The polyphenolic extracts showed a significant protective effect against oxidative stress.

The greatest effect were obtained at the concentration of 1200 mg/L; the figure shows the growth curve in culture medium without ingredient (YPD) after 4 mM H₂O₂ and the growth recover when the chia extract was applied.



Conclusions:

The present work completes the information available so far regarding the polyphenol content of chia when showing its ability to promote the antioxidant protective effect in a complete model such as yeast.

Keywords:

Oxidative stress, yeast, chia, polyphenols, antioxidant capacity

Conflict of Interest:

The author has declared that no competing interests exist.

Further Collaborators:

This work was financially supported by grants AGL2016-75687-C2-1-R from the Ministry of Economy, Industry and Competitiveness.