1st Research Meeting on Biochemistry

9th and 10th December 2021
Maringá, Paraná, Brazil

Post-Graduation Program
in Biochemistry

State University of Maringá

1st Research Meeting on Biochemistry

Organizing Committee

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Nairana Mithieli de Queiroz Eskuarek Melo

Vinicius Mateus Salvatori Cheute

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December 9th – Thursday afternoon

2:00pm – 2:15pm

Welcome

2:15pm – 4:00pm Lecture:

From nature to products: preservatives, dyes and bioactive ingredients.

Dr. Lillian Barros, Mountain Research Center (CIMO) – Polytechnic Institute of Bragança.

4:00pm – 4:20pm

Break and Poster Session

4:00pm – 6:00pm

Oral abstracts presentations

December 10th – Friday Morning

8:30am-12:30am

Seminars Session

December 10th – Friday Afternoon

2:00pm – 4:00pm Lecture:

Metabolic reprogramming in aging and age- related diseases.

Dr. Eduardo N. Chini, Mayo Clinic and Foundation – EUA.

4:00pm – 4:20pm

Break and Poster Session

4:00pm – 6:00pm

Oral abstracts presentations

Oral abstracts presentations

Thursday – December 9th

Elaine Kaspchak 04:20 pm

Effect of saponin on asparagine–glucose Maillard reaction

Maria Gabriela Leichtweis 04:35 pm

Haskap and blackthorn berries anthocyanin profile

Adriana Katherine Molina Vargas 04:50 pm

Study of Prunus spinosa l. fruit epicarp and Lonicera careulea l. fruit: alternative natural colorants with bioactive properties

Alexis Pereira 05:05 pm

Novel antioxidant and fibre– rich food ingredients from quince peel

Beatriz Helena Paschoalinotto 05:20 pm

Effect of fertilization via nutrient solution on the nutritional profile and chemical composition of Chicorium spinosum l.

Nairana Mithieli de Q. E. Melo 05:35 pm

Effects of arsenial compounds on fructose metabolism on the perfused rat liver

Friday – December 10th

Mateus José de Oliveira 04:20 pm

Effects of a high–fat low carbohydrate diet on plasmatic parameters, in vivo glucose metabolism and fatty liver development in rats: a study under different energetic conditions

Ana Cláudia Castro Novais 04:35 pm

Nutritional and chemical analysis and bioactive potential of aromatic and medicinal plants traditionally used as condiments

Ana Paula Ames Sibin 04:50 pm

Characterization and bioactivity of Copaiba essential oil carried in a self–emulsifying system

Mikel Añibarro–Ortega 05:05 pm

Solanaceae crop by– products as renewable sources of bioactive phenolic extracts

Paulo Vinicius M. C. Menezes 05:20 pm

Isocitrate lyase as a molecular target for weed suppression

Gustavo Henrique de Souza 05:35 pm

Effects of a Myrciaria jaboticaba Peel Extract and role of cyanidin–3–O– Glucoside on lipase in mice

SEMINARS

December 10th – 8:30 to 12:20

Heloisa Vialle Pereira Maróstica 8:30 – 8:50
High rate metabolization of triclosan differently modifies metabolic flow in the perfused rat liver

Lucas Costa Cabral 8:50 – 9:10
Morpho-cytopathological analysis of the midgut of Bombyx mori L. Infected with BmNPV and submitted to the antiviral drug BmS

Karina Borba Paulinodos Santos 9:10 – 9:30
Photodynamic effects of Toluidine blue O on mitochondrial ATP production and hepatic gluconeogenesis

Naiara Cristina Lucredi 9:30 – 9:50
Methylglyoxal impairs gluconeogenesis and increases oxidative stress in rat liver

Cynthia Letícia Serra Cabeça 9:50 – 10:10
Whey protein obtained by membrane separation processes fortified with microencapsulated antioxidant fraction from Stevia rebaudiana

Evelyn Silva Moreira 10:10 – 10:30
The short-term effects of berberine in the perfused liver

Break 10:30 – 10:40

Any Carolina Chagas 10:40 – 11:00
Anti-inflammatory activity of the clove oil-isolated beta- caryophyllene carried in a self-emulsifying system

Vinicius Mateus Salvatori Cheute 11:00 – 11:20
Tolerance to Triclosan of white-rot fungi: a preliminary study

Bruna Francini Lupepsa 11:20 – 11:40
Characterization of residues for the production of gibberellic acid by solid state fermentation

Maria Rosa Zorzenon 11:40 – 12:00
Obtaining ice cream sweetened with stevia products.

Jessica Amanda Garcia 12:00 – 12:20
Hepatoprotective action of Luehea divaricata bark extract

Summary

OPTIMIZED EXTRACTION OF CHLOROPHYLLS FROM *SOLANUM LYCOPERSICUM* L. VAR. *CERASIFORME* BY-PRODUCTS

Gomes, L.C.,[1,2] Molina, A.K.,[1,2] Novais, C.,[1] Pereira, C.,[1*] Dias, M.I.,[1] Pietro, M.A.,[2] Simal-Gandara, J.,[2] Ferreira, I.C.F.R.,[1] Barros, L.[1]

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The increasing worldwide consumption of cherry tomatoes (*Solanum lycopersicum* L. var. *cerasiforme*) is explained by the great acceptability by the consumer, along with the ease in its trade and distribution. Despite being a fruit that provides essential nutrients such as lycopene, vitamin C, and phenolic acids, its consumption is closely related to its sensory characteristics such as taste, color, and appearance. Nevertheless, along the production chain, some by-products are not used and are, therefore, discarded, generating large amounts of bio-residues [1–3]. The use of such bio-residues, namely the aerial parts, as a source of valuable compounds that can find other applications in food industry as, for example, food colorants, is a growing tendency. In this context, the following work aimed to explore the hydroethanolic extracts obtained from the aerial parts of cherry tomato, in terms of chlorophylls. For this purpose, two extraction methodologies were used, namely ultrasound assisted extraction for 15 minutes at 400 W and maceration assisted extraction for 120 minutes, both using 90% ethanol (*v/v*) as solvent. The chlorophyll pigments were identified and quantified by HPLC-DAD/ESI-MS. Chlorophyll *a*, *b*, and their isomers (*a'* e *b'*) were identified in both extracts, as well as direct derivatives of chlorophyll and phaeophytin *a* and *a'*, compounds commonly found in fruits of cherry cultivars. Regarding ultrasound assisted extraction, the most expressive compounds found were chlorophyll *b* and its *b'* isomer. As for maceration assisted extraction, chlorophylls *a* and *b* were the most abundant compounds in the extract. These results demonstrate the great potential of using cherry tomato by-products as sources of natural pigments, presenting a basis for deeper investigations regarding the optimal extraction conditions of chlorophylls and their possible uses within several industrial sectors.

References

[1] C. Fernandes, J.E. Corá, L.T. Braz. alterações nas propriedades físicas de substratos para cultivo de tomate cereja, em função de sua reutilização; Hostalicias brasileiras, 24 (2006) 94-98.

[2] E. F. Mariano, J. Freitas, R. de Lima, R.C. França. Termoterapia alternativa para sementes orgânicas de tomate cereja (*Solanum Lycopersicum* Var. *Cerasiforme*). II congresso internacional das ciências agrárias, 2017.

[3] S. S. Monteiro, S. S. Monteiro, E. A. da Silva, e L. P. Martins, "maturação fisiológica de tomate cereja", rebagro, vol. 8, nº 3 (2018) 05-09.

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