



# Natural products application: Health, Cosmetic and Food

Provided by nature, adapted scientifically for industry



**Book of abstracts**  
**1st International Online Conference**  
**4th - 5th February 2021**

## Title

1st Natural products application: Health, Cosmetic and Food: book of abstracts

## Editors

<sup>1</sup>Lillian Barros

<sup>1</sup>Bruno Melgar Castañeda

<sup>1</sup>Carlos Seiti Hurtado Shiraishi

## Suport

Eletronic

## Format

PDF

## Edition

Instituto Politécnico de Bragança (IPB)

<http://www.ipb.pt>

5300-253 Bragança, Portugal

Tel. (+351) 273 303 382

## ISBN

978-972-745-286-6

## URL

<http://hdl.handle.net/10198/22068>



## 1° Online Congress on Natural products application: Health, Cosmetic and Food

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**Lillian Barros**<sup>1,2,3</sup> - Instituto Politécnico de Bragança

**Alexandre Gonçalves**<sup>2</sup> - MORE

**Maria José Alves**<sup>2</sup> - Instituto Politécnico de Bragança

**Rui Abreu**<sup>2</sup> - Instituto Politécnico de Bragança

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**Carlos Seiti Hurtado Shiraishi**<sup>5</sup> - Instituto Politécnico de Bragança

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<sup>2</sup>Keynotes curation

<sup>3</sup>Planning, Conceptualization, Execution

<sup>4</sup>Graphic design, Digital Strategy, Streaming

<sup>5</sup> L<sup>A</sup>T<sub>E</sub>X Formatting



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The Mountain Research Center is one of the 5 research centers within the Polytechnic Institute of Bragança and is an RD unit of excellence. CIMO conducts research on the Mediterranean mountain systems following an interdisciplinary strategy that goes from Nature to Products.

In all these years, we have had the commitment of disseminating science around the world, creating solid and robust bonds and partnerships with both, academia and industry, and we are always looking for more challenging collaborations.

In this sense, the mountain research center gathers different ways to keep evolving in our main mission of science dissemination, especially now during this difficult pandemic situation, in which science dissemination has been extremely affected.

Therefore, one of our responses was the creation of the first edition of the Natural Product Applications Online Congress, which consists in the dissemination of research using natural products applied in 3 different areas: cosmetic, food, and health.

Thanks to all of you in less than a month the congress reached more than 483 registration from universities and important companies from different parts of the world, such as Algeria, Argentina, Brazil, Colombia, France, Greece, Italy, Mexico, Netherlands, Poland, Russia, Serbia, Slovenia, Spain, Ukraine, and USA.

The NPA congress received and processed more than 211 communications, from which the scientific committee has selected the most appropriate for each type of communication, considering the limited time we have for this conference.

All the submitted works were divided into three main categories, Oral, Pitch, and Poster communications, which will join 9 Keynote lectures and one invited oral communication, to which, we would also like to thank for their availability and for accepting this invitation.

We could not thank you more for your participation, and we hope to see you next year on the second edition of the Natural Product Applications Congress.

NPA Team.

# Index

<b>About</b>	<b>5</b>
<b>Keynotes Information</b>	<b>8</b>
<b>Congress Program</b>	<b>12</b>
<b>Keynote presentation</b>	<b>20</b>
<b>Oral communication</b>	<b>35</b>
<b>Pitch communication</b>	<b>59</b>
<b>Poster presentation</b>	<b>83</b>

## PCF-64

## STUDY OF AROMATIC AND MEDICINAL PLANTS AS POTENTIAL NATURAL INGREDIENTS FOR THE FOOD INDUSTRY

Rafael Mascoloti Spréa<sup>1</sup>, Cristina Caleja<sup>1\*</sup>, Eliana Pereira<sup>1</sup>, José Pinela<sup>1</sup>, Marina Kostić<sup>2</sup>, Marina Soković<sup>2</sup>, Isabel C.F.R Ferreira<sup>1</sup>, Joana Amaral<sup>1</sup>, Lillian Barros<sup>1</sup>

<sup>1</sup> Centro de Investigação de Montanha (CIMO), Instituto Politécnico de Bragança, Campus de Santa Apolónia, 5300-253 Bragança, Portugal

<sup>2</sup> Institute for Biological Research "Siniša Stanković"- National Institute of Republic of Serbia, University of Belgrade. \*ccaleja@ipb.pl

Considering the association of plants consumption and utilization with the treatment of some illnesses and diseases, several aromatic and medicinal plants have been used in traditional and contemporary medicine. This capacity has been proven scientifically and there are numerous studies describing their therapeutic properties in the treatment of inflammatory and cardiovascular disorders, diabetes, among other conditions [1]. The antioxidant and antimicrobial activities have already been studied in a wide variety of plants, which have been shown to contain bioactive molecules effective against pathogenic microorganisms and capable of removing reactive oxygen species formed in cells [2,3].

In this sense, ten aromatic and medicinal plants (*Eucalyptus globulus* Labill., *Olea europaea* L., *Melissa officinalis* L., *Origanum vulgare* L., *Glycyrrhiza glabra* L., *Arbutus unedo* L., *Matricaria recutita* L., *Thymus vulgaris* L., *Ocimum vulgare* L., and *Salvia officinalis* L.) were selected to perform an initial screening for the exploration of natural ingredients with bioactive potential.

The plant extracts were obtained after ethanolic extraction. The antioxidant activity was evaluated through two *in vitro* cell-based assays, namely the lipid peroxidation inhibition test (TBARS) and the oxidative hemolysis inhibition test (OxHLIA), and antimicrobial activity was tested by the broth microdilution method, against a panel of bacteria and fungi, selected according to their public health importance.

These analyses presented very promising results, showing a high bioactive potential for all plant extracts.

In the TBARS assay, *E. globulus* and *O. vulgare* stood out with lower EC<sub>50</sub> values, followed by *T. vulgaris* and *S. officinalis*. In turn, in the OxHLIA assay, for  $\Delta t$  60 min and  $\Delta t$  120 min, the excellent antioxidant capacity of *S. officinalis* and *T. vulgaris* was also evidenced, respectively. In addition, the evaluation of the antimicrobial activity highlighted the sample of *G. glabra*, both at the bacterial and fungal levels. Overall, it was possible to prove the great bioactive potential of the *E. globulus*, *O. vulgare*, *S. officinalis*, *T. vulgaris* and *G. glabra* extracts, and to highlight them as promising options for exploitation in the food industry.

### References

- [1] Shaygani, E., Bahmani, M., et al. *Phytomedicine*, 23, (2016), 1119-1126.  
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### Acknowledgments

The authors are grateful to the Foundation for Science and Technology (FCT, Portugal) for financial support through national funds FCT/MCTES to CIMO (UIDB/00690/2020); national funding by FCT, P.L., through the institutional and individual scientific employment program-contract for L. Barros and J. Pinela's (CEECIND/01011/2018) contracts, respectively; research contract of C. Caleja (Project AllNatt, POCI- 01-0145-FEDER 030463) and E. Pereira (Project Mobilizador Norte-01-0247-FEDER-024479: ValorNatural®); to FEDER-Interreg España-Portugal program for financial support through the project TRANSCoLAB 0612\_TRANS\_CO\_LAB\_2\_P, ERDF, through the Incentive System to Research and Technological development, within the Portugal2020 Competitiveness and Internationalization Operational Program for the financial support to BIOMA(POCI\_01\_0247\_FEDER\_046112); ERDF through the Regional Operational Program North 2020, within the scope of Project GreenHealth (Norte-01-0145-FEDER-000042).