



# 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**

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

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## Morning - 5 February

### Cosmetic

#### Oral Presentations (10:30 - 11:30)

**Anna Szemik-Hojniak**

Biomimetic short peptides in medicine and cosmetology

**Celso Afonso Ferraz**

Contributions towards the ecotoxicological evaluation of plant extracts and essential oils

**Javier Echave Álvarez**

Fatty acid comp., antioxidant and antibacterial act. of ethanolic PLE extracts of 4 macroalgae species from Galicia

**Paula Plasencia**

Bioactive properties of different extracts obtained from the aerial parts of blueberry and raspberry raw materials

**Sara Gonçalves**

Evaluation of cosmetic properties of natural ingredients in the Trás-os-montes area: a PhD project

**Silena Silva Delgado Alves**

*Humulus lupulus* L.: cosmetic application of extracts obtained from cones and vegetative parts

#### Pitch Presentations (11:40 - 12:00)

**Ana Costa**

From garbage to glamour: assessing the organoleptic prop. of formulations containing lycopene-enriched extracts from tomato waste

**Ana Rita Silva**

Optimization of a tannin-rich extract using response surface methodology

**Bruno Melgar Castañeda**

Time dependency on bioactive compounds UAE extractions

**Diana Andreia Tavares Pinto**

*Castanea sativa* shells: from an undervalued agro-residue to a valuable raw material for cosmetic industry

**Maria Aurora Soares da Silva**

Bioactive properties of six macro-alga from the iberic peninsula sea

**Patrycja Brudzyńska**

Application of plant-derived colorants in cosmetic products

<b>PCF-82: BIOACTIVE POTENTIAL OF AROMATIC AND MEDICINAL PLANTS TRADITIONALLY USED AS CONDIMENTS</b>	
Cláudia Novais	251
<b>PCC-01: MICROWAVE-ASSISTED EXTRACTION OF SALICORNIA RAMOSSISIMA BIOACTIVE COMPOUNDS: COMPARISON WITH CONVENTIONAL EXTRACTION</b>	
Ana Margarida Silva	253
<b>PCC-02: Unveiling the protective role of natural bioactive compounds towards colorectal cancer.</b>	
Ana S. Oliveira	254
<b>PCC-03: AGROFORESTRY AS PRODUCTION SYSTEMS OF ESSENTIAL OILS.</b>	
Ângela Pawlowski	255
<b>PCC-04: THE POTENTIAL OF THE MUSHROOM SHIITAKE (<i>LENTINULA EDODES</i>) AQUEOUS EXTRACT AS COSMETIC ACTIVE INGREDIENT</b>	
Bárbara Ribeiro	256
<b>PCC-05: DEVELOPMENT OF A COSMETIC ANTI-AGING GEL FORMULATION WITH EXTRACTS OF SPONTANEOUS PLANTS AND CULTIVARS OF <i>HUMULUS LUPULUS</i> L.</b>	
Briolanja dos Santos	257
<b>PCC-06: LIPID OXIDATION IN COSMETIC CREAMS: THE POTENTIAL PROTECTIVE EFFECTS OF NATURAL EXTRACTS</b>	
Cristina Delerue-Matos	258
<b>PCC-07: THYROSINASE AS A PROTEIN TARGET FOR DERMATOLOGICAL TREATMENT</b>	
Diogo Pinto Luís	259
<b>PCC-08: DEVELOPMENT OF A COSMOS SOLID EMULSION</b>	
Fernanda F. Possamai	260
<b>PCC-09: DETERMINATION OF THE TOTAL ANTIOXIDANT ACTIVITY OF THE TOASTED COFFEE BY-PRODUCT</b>	
Fernanda Maria da Silva	261
<b>PCC-10: WATER-IN-OIL EMULSIONS BASED ON NATURAL INGREDIENTS FOR FUNCTIONAL APPLICATIONS</b>	
Giovana Colucci	262
<b>PCC-11: OLIVE OIL BY-PRODUCTS: IMPACT IN COSMETIC FORMULATIONS</b>	
Helena Margarida Ribeiro	263
<b>PCC-12: SUBSTANTIATION OF HIBISCUS EXTRACT USE IN COSMETICS</b>	
Inga Iždonaitė-Medžiūnienė	264

## PCC-08

**DEVELOPMENT OF A COSMOS SOLID EMULSION**

Fernanda F. Possamai,<sup>1</sup> Ricardo Spencer,<sup>2</sup> Susana M. Cardoso,<sup>3</sup> Maria João Sousa<sup>1,4</sup>, Olívia R. Pereira<sup>4\*</sup>

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Natural products are becoming a trend in the cosmetic market, due to a growing awareness and concern with the origin of these products. The certification of natural products, especially organic ones under the COSMOS signature preserves the integrity of the constituents, in an environmentally appropriate and safe for human health, expanding the concept of "green chemistry", guaranteeing the origin, and processing of the products, storage, manufacturing, packaging, etc. [1]. The objective of this study was to develop a moisturizing cosmetic emulsion in the solid format according to COSMOS certification, with guarantee the quality of the product in a new concept of solid cosmetic. 59 tests were carried out to optimise this emulsion, with the best possible hydration level. The different tests included variations in components and their amounts, following be evaluation of sensory aspects for each formulation. The final cosmetic emulsion formulation (Figure 1) contains components of Portuguese origin such as grape seeds oil from Douro Valley, olive oil and extract of by-products of acorn (*Quercus Ilex L.*) and essential oils of mandarin, geranium, coriander and cinnamon. The formulation has undergone accelerated stability tests with temperatures (40 °C /-12 °C). The pH, density and organoleptic characteristics were evaluate. The phenolic profile of acorn by-product (*Quercus ilex L.*) was performe by UHPLC-DAD-ESI-MS2. A questionnaire was applying to evaluate the acceptance after use of the moisturizing cosmetic emulsion. In stability tests, overall the formulation showed small color variations and less aroma intensity, maintaining hydration and solid state. The pH changes were from  $4.68 \pm 0.006$  to  $4.78 \pm 0.05$  and the density was maintaining at  $0.73 \text{ kg/m}^3$ . The polar extract of acorn by-product have as major compounds trigalloyl-HHDP-glucose, valoneic acid dilactone and gallic acid, known as antioxidants compounds. [2,3]. The essential oils bring beneficial properties to the skin and the aroma. In the post use of solid emulsion survey applied shown that "aroma" was the second point most valorised (47.6%), after "hydration" (90.5%). The results shown that the majority of participants (81.0%) were "very satisfied" or "satisfied" with the solid emulsion indicating the intention to use it if it is on the market (76.2%). This study highlights the research in reformulations from liquid to solid products, and the potential of using Portuguese raw materials such as acorn.

[1]The COSMOS Standard. <https://www.cosmos-standard.org/about-the-cosmos-standard>; Access at 2021, January 11.

[2] S. A. O. Santos, P. C. R. O Pinto, A. J. D Silvestre, C. P. Neto. *Industrial Crops and Products* 31 (2010) 521–525.

[3] M. A. Bonache, S. Moreno-Fernández, M. Miguel, B. Sabater-Muñoz, R. González-Muñiz. *ACS Combinatorial Science* 20 (2018) 694-699.

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