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Conference Report

14th Edition of the Nacional Organic Chemistry Meeting and 7th Edition of the Nacional Therapeutic Chemistry Meeting

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Conference Report

14th Edition of the Nacional Organic Chemistry Meeting and 7th Edition of the Nacional Therapeutic Chemistry Meeting [†]

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[†] Presented at the 14th National Organic Chemistry Meeting and the 7th National Medicinal Chemistry Meeting, Caparica, Portugal, 20–22 April 2022.

Abstract: Once more under the auspices of the Sociedade Portuguesa de Química, two important fields of Chemistry are brought together into a single event, the 14th National Organic Chemistry Meeting and the 7th National Medicinal Chemistry Meeting. These conferences brought together both long-recognized experts and newcomers.

Keywords: organic synthesis; drug design; natural compounds; drug discovery; bioactive molecules; structure–activity relationship; Medicinal Chemistry; anticancer agents; photosensitizers



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1. Aim and Scope of the Meeting

The Scientific Committee brought together a wide range of specialists in the areas of Organic and Medicinal Chemistry, which allowed the high quality of the meeting that was evident in the scientific excellence of the works presented. The contributions include plenary lectures, invited oral communications, oral communications, keynotes, flash, and poster communications, where the main topics focused on organic synthesis, drug design, natural compounds, drug discovery, drug metabolism, and Medicinal Chemistry.

This approach between scientists is of great importance for the exchange of experiences and recent knowledge as well as different perspectives in the various areas of study, and it enhances collaboration between teams. This environment of scientific sharing took place in the relaxed atmosphere by the sea at Costa da Caparica.

2. Plenary Presentations

2.1. *Incursions into Anticancer Drug Design and Drug Toxicity Elucidation: Strategies and Challenges*

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Two major research avenues in our group are the design, synthesis and evaluation of new anticancer drugs and the elucidation of mechanisms of toxicity elicited by xenobiotic agents of therapeutic or environmental relevance. Selected recent examples from both approaches will be presented and discussed.

Emphasis will be placed on the combined use of *in silico* tools, chemical synthesis and proof-of-concept biochemical and biological testing to tackle epigenetic pathways

of the fatty acids profile produced by 55 Estremadura Spur Actinobacteria strains was performed by GC/MS after transesterification of the lipidic extract toward the respective methyl esters.

Our results revealed that strains from *Micromonospora*, *Streptomyces*, *Saccharopolyspora*, *Actinomadura*, *Nocardiopsis*, *Saccharomonospora*, and *Stackebrandtia* genera produce SFA (saturated fatty acids), MUFA (monounsaturated fatty acids), PUFA (polyunsaturated fatty acids), cyclo fatty acids, odd fatty acids and BCFA (branched chain fatty acids). The majority are BCFA (41%), MUFA (33%) and SFA (30%). For the lipid profile of BCFA regarding the branch position, iso series are the most abundant. The MUFA profile exhibited ω 9 (26%), ω 7 (5%), and ω 6 and ω 5 families in lower amounts.

This study demonstrates that the Estremadura Spur Actinobacteria are a rich source of fatty acids with potential applications in biotechnology.

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7.23. Valorization of Macaronesia Beach-Cast Seaweeds: Secondary Metabolites and Antiaging Activity

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Beach-cast seaweeds are a seasonal phenomenon consisting of the accumulation of large tons of algae on beaches, which is unpleasant for beach users and affects the tourism industry, mainly because tourists often interpret stranded natural litter as lowering beach

quality, especially if the material starts to decompose [1]. These beach casts are always variable mixtures of different species of seagrass and seaweeds [2]. The present work aimed to contribute to the valorization of this biomass by studying its chemical composition and bioactivities that reveal its potential in the pharmaceutical and/or cosmeceutical industries.

The beach-cast seaweed studied here was collected at Playa de Las Canteras, Las Palmas, Gran Canaria, it and has the following composition: *Stypocaulon scoparium* (68.7%) and *Lobophora variegata* (14.4%), both brown algae, the green alga *Cymopolia barbata* (13.4%) and red algae from *Liagora genus* (3.5%). The methanol extract, obtained from dry material, was fractionated by solubility in different solvents. The extract and fractions were evaluated for their antiaging activity.

The most active fractions were fractionated by different chromatographic techniques, obtaining four pure compounds. The use of spectroscopic techniques (1D and 2D NMR, MS) allowed the elucidation of the chemical structure (Figure 1) of three already known compounds (compounds 1–3) [3] and one described for the first time in the literature (compound 4). Lobophorol B exhibited antioxidant activity being a weak inhibitor of tyrosinase and cholinesterase. All the experimental results and their discussion will be presented.

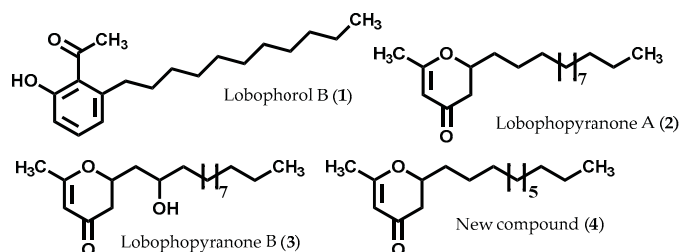


Figure 1. Chemical structure of compounds isolated from beach-cast seaweed.

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7.24. Identification of Phthalates in the Angolan *Diospyros Batocana* Medicinal Plant—Natural Products or Contaminants?

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