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05-07 November

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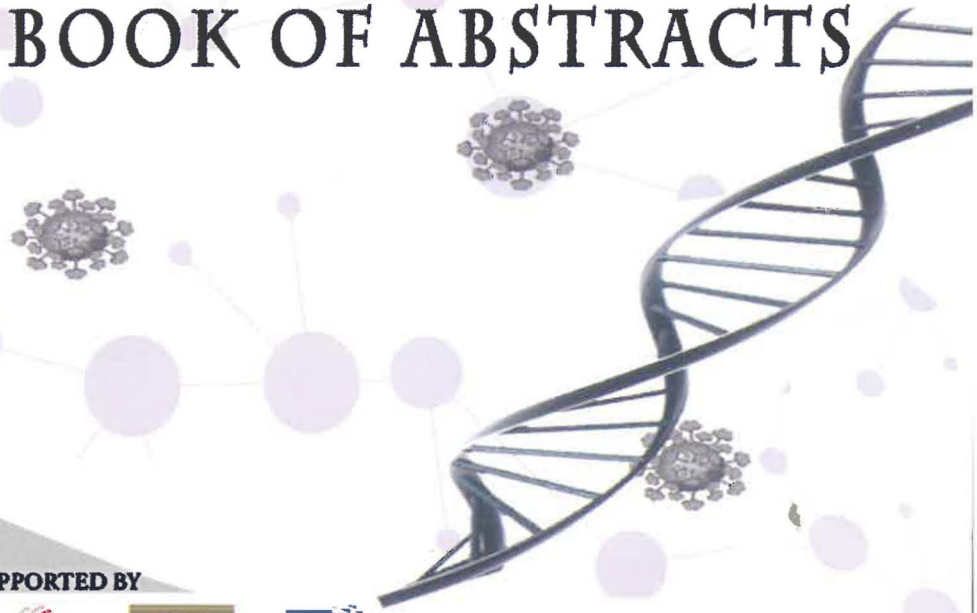
BOOK OF ABSTRACTS



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Extraction of bioactive compounds from plants as promising agents against SARS-CoV-2

Mariana C. Pedrosa1, Cláudia Rodrigues3, Sandrina Heleno1, Márcio Carocho1, Rui M.V. Abreu1, Tânia Ribeiro1, Manuela Machado1, Miguel Marques Pinto4, J. Pedro Simas3, Manuela Pintado2, Lillian Barros1

1Centro de Investigação de Montanha (CIMO), Instituto Politécnico de Bragança, Portugal.
2Centro de Biotecnologia e Química Fina (CBQF), Universidade Católica Portuguesa, Portugal.
3 Instituto de Medicina Molecular, Faculdade de Medicina, Universidade de Lisboa, 1649-028 Lisboa, Portugal
4Next Generation Chemistry, Unipessoal Lda., Rua do Progresso 145, 4455-533 Perafita, Portugal

Background: Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is a pathogenic virus with high transmissibility and infectivity, which began to spread across the globe in late 2019, which soon became the COVID-19 pandemic, causing social and economic impacts. In response to this situation, the scientific community started the development of effective substances against this virus. Bioactive molecules present in plants, mainly phenolic compounds, are promising alternatives to combat pathological disorders. Therefore, the objective of this work was to use the aqueous extract of a mountain plant as an antiviral substance to neutralize COVID-19.

Materials/Methods: The mountain plant extract was obtained by dynamic maceration in water for 1 hour (twice). After obtaining the extracts, they were evaluated for their phenolic profile by high performance liquid chromatography coupled to a diode array detector and a mass spectrometer detector (HPLC-DAD-MS). Cytotoxicity was determined by the sulphorhodamine B assay in Vero cells, as well as the evaluation of the antiviral activity.

Results: Regarding the phenolic profile, the main compounds found were trigalloyl-HHDP-glucoside; pentagalloyl glucose, quercetin 3-O-glucuronide and quercetin O-hexoside. The GI50 (concentration able to inhibit 50% of cell proliferation) and the MNCC (maximum concentration without toxicity) were between 100 and 180.3 µg/mL and between 85 and 120 µg/mL, respectively. The MNCC value was obtained considering the concentration that allowed 90% of cell proliferation of Vero cells. In relation to the viral activity screening, the results achieved for the viral titre were between 5000 and 9000 PFU/mL, while for the antiviral activity ranged between 0.5 and 3.0 Mv, being the percentage of reduction in a range of 85-95 %.

Conclusion: The mountain plant extracts showed in its composition bioactive compounds and consistent results of antiviral activity. Moreover, it presents itself as a potential substance for protection applications against the COVID-19 virus. However, further studies in specific products are required for validation and implementation.

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