

315. Antioxidant activity, phenolic profile, cytotoxicity and genotoxicity of plant extracts

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The outbreak of COVID-19 disease caused by SARS-CoV-2 forced the scientific world to search for new alternatives to help control the virus. Plant extracts have natural compounds that might provide a starting point for the research on the use of plants as an excellent source of new antiviral agents against viruses, including COVID-19 to be included in disinfectants, fabrics or other materials. In this study, the polyphenols content (Folin-Ciocalteu), antioxidant capacity (DPPH, ABTS and ORAC) and the phenolic profile (HPLC) of different hydroethanolic (ethanol:H₂O 50:50 v/v) extracts of medicinal plants cultivated under controlled conditions in Portugal (echinacea, rosemary, laurel, thyme and rock rose) were determined, as well as the cytotoxicity effect against a keratinocyte cell line using cell viability assay by PrestoBlue and genotoxicity effect using the AMES test. According to the results, total phenolic content ranged from 204.54 ± 1.78 / 274.20 ± 3.14 (mg EAG/g extract) with the rock rose extract presenting the highest content ($p < 0.05$). The extracts showed a good antioxidant capacity demonstrated by the high values found for ORAC, which ranged 2855.03 ± 9.75 / 5285.35 ± 60.04 $\mu\text{Mol Trolox/mg extract}$. HPLC analysis revealed the presence of different compounds in the extracts such as the kaempferol-O-glucuronide, catechin, protocatechuic acid and galloyl glucoside, representing a potential source of bioactive components with antioxidant capacity. No toxicity was observed towards the keratinocyte cells and none of them showed mutagenic effects. Based on the results of safety and high polyphenols content of the extracts they demonstrate a great potential as antimicrobial agents. This will allow the design of new experiments aimed at evaluating the antiviral activity of these extracts, especially against SARS-CoV-2.