EVALUATING OF ANTIOXIDANT ACTIVITY OF SOME PHARMACEUTICALS USING BRIGGS-RAUSCHER OSCILLATING REACTION METHOD, DPPH AND ABTS

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Abstract

With age, the body produces fewer natural antioxidants that neutralize the action of free radicals. When ROS and RNS accumulate, oxidative processes and damage caused by their actions are the main reasons for impaired health and accelerated aging, and sometimes it is necessary to take in antioxidants through food or pharmaceutical preparations to protect our own health. In this paper, the antioxidant activity of selected pharmaceutical preparations used as sources of antioxidants, as well as the standards of gallic acid, fexofenadine, curcumin, prendison, and alpha-lipoic acid, was examined. The standards were chosen because they are potentially found in selected pharmaceutical preparations. The DPPH method proved that the best antioxidant from the group of analyzed pharmaceutical preparations is the one with the highest proportion of *Ganoderma lucidum* mushroom extract and royal jelly (IC_{50} =0.251 mg/mL). It is followed by a sample containing turmeric extract as an active substance (IC_{50} =0.697 mg/mL). The Briggs-Rauscher method showed the opposite results. The highest antioxidant activity by the Briggs-Rauscher method was shown by the sample with the active substance of turmeric extract (BRAI =0.33), which is in agreement with the results obtained by the ABTS method. After that, a sample with *Ganoderma lucidum* mushroom extract and royal jelly (BRAI=0.025). In the ABTS method, the pharmaceutical preparation with the highest proportion of *Ganoderma lucidum* mushroom extract showed the highest antioxidant activity (IC_{50} = 0.152 mg/mL). Of the standards, the best antioxidant activity was shown by gallic acid (IC_{50} = 0.0085 mg/mL), and the weakest by prednisone (IC_{50} = 31.02 mg/mL) and fexofenadine (IC_{50} = 125.33 mg/mL).

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