

The study of physicochemical properties of oxidized enotannins

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Biologically active substances of natural origin are often used in medicine and agriculture for combating different diseases caused by fungi, bacteria and viruses. The grape seeds are a valuable source for obtaining enotannins, that are natural compounds with phenolic structures and which possess remarkable antioxidant properties. The enotannins obtained from grape seeds are natural compounds with polyphenolic structure, possessing significant antioxidant properties, but their use is difficult, since most of the enotannins are insoluble in water. To improve the physicochemical, antioxidant and antibacterial properties of the enotannins, it was amended their chemical structure. Enotannins were selected from local sources, from seeds of white (Enotannin 2) and red grapes (Enotannin 1 and 3). New hydrophilic products (Enoxil I, II and III) were obtained by depolymerization of the macromolecular chains of the initial enotannins through the oxidation process by hydrogen peroxide using.

To determine the antioxidant properties of the Enoxil compound it was used the chemiluminescence method (CL), in the generating luminescence system- Luminol- H_2O_2 . It was prepared 0.1% solution of Enoxil, Luminol (1 mM) and H_2O_2 (0.2 mM) and as a buffer it was used Tris-HCl pH 8.6. The results of the research for antioxidant activity (AA %) assessment of Enoxil (I, II and III) have demonstrated that the values are basically the same. They are quite pronounced and are in the range from 93.16 to 95.58%.

The obtained compounds have to be studied to determine their antifungal, antibacterial and pharmacological properties.

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