

Comparative evaluation of tests for determining antioxidant activity on the examples of biologically active 3-substituted-3-hydroxy-6-phenyl-3,4-dihydro-2H-1,3-oxazines

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Abstract

Based on the reaction of 1,6-diaryl-3,4-dihydroxy-2,4-hexadiene-1,6-dione and arilidenarilmines we have synthesized various 3-substituted-3-hydroxy-6-phenyl-3,4-dihydro-2H-1,3-oxazines. Due to the urgency of finding new biologically active compounds, there were studied the antioxidant activity of oxidative stress on the model of the culture of bacteria *Escherichia coli* M17 by the coulometric method, as well as the antiradical activity of the obtained oxazines. Antiradical properties of the compounds were studied in the coupling reaction of stable free radical 2,2-diphenyl-1-picrylhydrazyl. As a comparison standard Trolox was used. Four compounds with moderate anti-radical activity were found. Among most of the samples investigated antioxidant activity was demonstrated by (2Z)-3-hydroxy-3-[4-hydroxy-2-(4-methylphenyl)-2-(4-methylphenyl)-3,6-diphenyl-3,4-dihydro-2H-1,3-oxazin-4-yl]-1-phenylprop-2-en-1-one.