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Antioxidant action of the structural analogs of tyrosol – the active substance of rhodiola rosea

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Abstract

Inhibiting action of tyrosol and their synthetic analogs was studied in comparison with α-tocopherol and butylhydroxitoluene. Shown that the hydroxylation of tyrosol increase antioxidant activity of connection 1.5 times. The introduction of one o-*tert*-butylsubstitute increase the inhibiting action 3.5; the introduction of two substitutes – more than 4.0 times. The maximum inhibiting effect was observed in *tert*-butylhydroxytyrosol, structural modification of which were included simultaneously both hydroxylation and alkylation. The activity of studied substances was lower than α-tocopherol and butylhydroxitoluene. It was established that investigating antioxidants, as many natural inhibitors (α-tocopherol, carotenoids, flavonoids) had extreme dependence of induction periods from their concentration. Thus, result directed modification of the structure of natural compounds are obtained the new effective inhibitors of the oxidations, whose application makes it possible to exclude the possibility of the undesirable consequences of the overdose of the inhibitors of oxidation.