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The importance of hydroxyl substituent in position 4' in flavonoids for modulation of chemiluminescence generated by an enzymatic system (horseradish peroxidase – luminol – hydrogen peroxide)

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The effect of naturally occurring flavone and flavanone derivatives with or without hydroxyl group in position 4' on chemiluminescence (CL) an enzyme system with luminol, horseradish peroxidase and hydrogen peroxide was studied. The 4'-hydroxy flavonoids tested (only one group in ring B and –H in position 3) stimulated CL. Lack of the hydroxyl group in position 4', two hydroxyl groups in ring B, the hydroxyl group in position 3 of flavonoids changes reactivity towards inhibition of CL. A similar effect of hydroxyl group for *p*-coumaric acid, but not for *o*- and *m*-coumaric acid in comparison with flavonoids (with one hydroxyl group in ring B) was observed.