

Interaction of quercetin, genistein and its derivatives with lipid bilayers - an ATR IR-spectroscopic study.

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Streszczenie

Genistein, a main soy isoflavone, is well known as phytoestrogen and antioxidant but details of its interactions with lipid membranes are poorly understood. The aim of this work was to elucidate the interaction of genistein, its derivatives and quercetin with lipid bilayers using attenuated total reflection infrared spectroscopy technique. Measurements performed mainly on liposomes and assistantly on dehydrated lipid films enabled us to find that studied flavonoids intercalate into phospholipid bilayers. The temperature of chain-melting phase transition for isoflavone-mixed DPPC liposomes was determined. The changes of population of the *trans/gauche* conformers of lipid chains were studied. They exert rigidifying effect in hydrophobic core of bilayer and due to the formation of hydrogen bonds induce a new spatial arrangement of lipid molecules.

Słowa kluczowe

Flavonoids, Genistein, IR spectroscopy, Lipid bilayers, Antioxidant

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