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## Isolation of Eriocitrin (Eriodictyol 7-rutinoside) from Lemon Fruit (*Citrus limon* BURM. f.) and Its Antioxidative Activity

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An antioxidant was isolated from the peel and juice of lemon fruit (*Citrus limon* BURM. f.). It was identified as eriocitrin (eriodictyol 7-rutinoside) of the flavanone glycoside by HPLC, <sup>1</sup>H-NMR and <sup>13</sup>C-NMR analyses. The purified eriocitrin was readily soluble in water, methanol, and ethanol. A water solution of 0.05% eriocitrin was weakly acidic (pH 4.2). Eriocitrin was found to be stable even at high temperature (121°C, 15 min) in acidic solution (pH 3.5). The distribution of eriocitrin in citrus fruits was found to be especially abundant in lemons and limes, however, it was scarcely found in other citrus fruits. In the case of lemon fruit, eriocitrin was primarily distributed in the peel (about 1,500 ppm) composed of the albedo (mesocarp), flavedo (epicarp), and pulp vesicles. It was also significantly present in the juice (about 200 ppm) but was not detected in the seed. Two varieties of lemon fruits, eureka and lisbon, almost had the same eriocitrin content. The antioxidative activity of eriocitrin in the linoleic acid autoxidation system was equal to that of  $\alpha$ -tocopherol, and it was enhanced when used together with citric acid. The eriocitrin had a synergistic effect on  $\alpha$ -tocopherol.

**Keywords:** [lemon fruit](#), [Citrus limon](#), [antioxidant](#), [eriocitrin](#), [flavanone glycoside](#)



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