

탱자나무(*P. trifoliata*) 과실 에탄올 추출물의 폴리페놀과 플라보노이드에 대한 연구
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Polyphenols and Flavonoids of Ethanol Extracts from the *Poncirus trifoliata* Fruit

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Objectives

The *Poncirus trifoliata* belonging to the family Rutaceae has been widely used in oriental medicine as a remedy for gastritis, dysentery, inflammation, digestive ulcers. Nevertheless, little is known concerning the biological activities of the ripe fruit of *P. trifoliata*. In this study, the contents of polyphenol and flavonoids and antioxidative activities of three parts (pericarp, seed, sarcocarp) and ethanol extract from *P. trifoliata* fruit have been studied.

Materials and Methods

○ Materials

The *P. trifoliata* was collected in November 2007, at the Gyeongsan, Gyeongbuk. After collecting the pericarp, seed and sarcocarp, and we separated, dried, and used them for a sampling.

○ Extraction and Experiment

The pericarp, seed and sarcocarp of the *P. trifoliata* were extracted in a reflux extractor for 3 hours at 60°C, and which process was repeated three times. After the extracts were filtered and concentrated. This extracts were freeze dry and made a powder, it used the experiment sample. This sample was used to investigate total polyphenol and flavonoids contents and antioxidant activities such as electron donating ability (EDA), xanthine oxidase (XO) inhibition and nitrite scavenging ability of *P. trifoliata* fruit.

Results

At the result of the measurement of total polyphenol contents, pericarp was the highest content as 60.54%, and those of seed and sarcocarp were 19.44%, 12.68%, respectively. In the results of measurement of total flavonoids contents, sarcocarp showed the highest flavonoids contents of 20.39%. All kinds of extracts showed over 77% value of EDA at the concentration of 2.0 mg/ml. As the result of the inhibition activity of XO, pericarp, seed and sarcocarp showed the highest activities over 90% at 2.0 mg/ml. The nitrite scavenging ability of the pericarp was the highest value as 49.63%, at pH 1.2, 2.0 mg/ml concentration. mg/g

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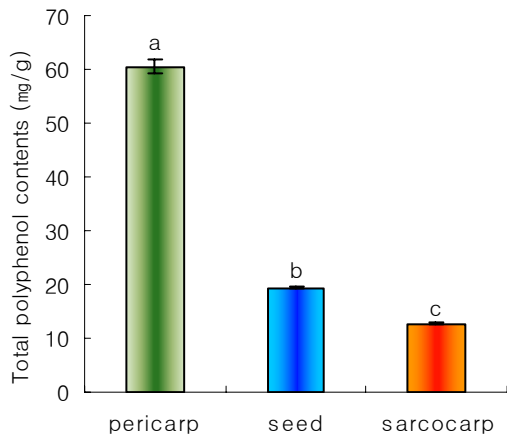


Fig. 1. Total polyphenol contents of extracts from *P. trifoliata*.

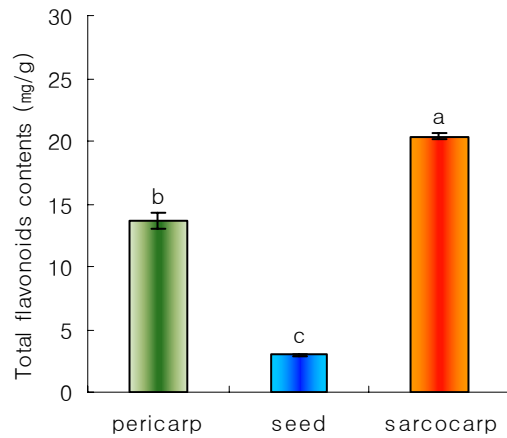


Fig. 2. Total flavonoids contents of extracts from *P. trifoliata*.

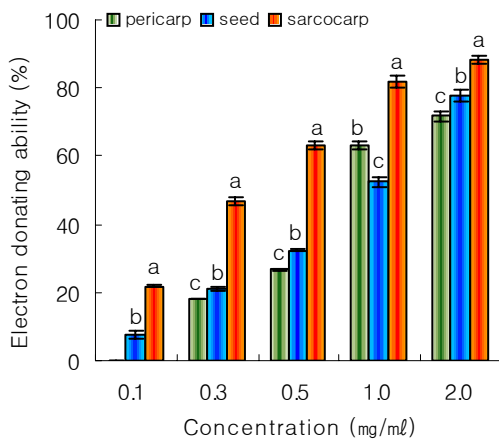


Fig. 3. Electron donating ability of extracts from *P. trifoliata*.

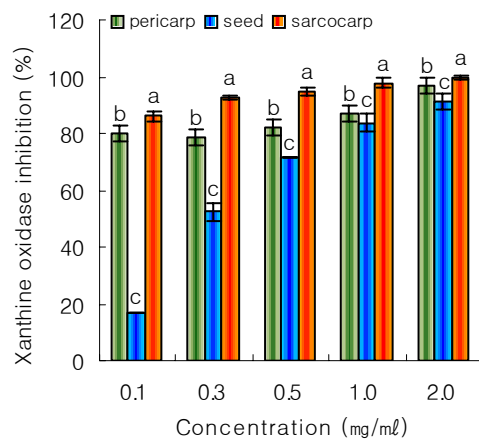


Fig. 4. Xanthine oxidase inhibition of extracts from *P. trifoliata*.

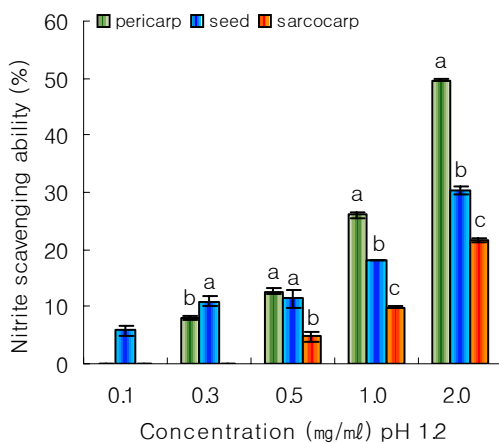


Fig. 5. Nitrite scavenging ability of extracts from *P. trifoliata* at pH 1.2.

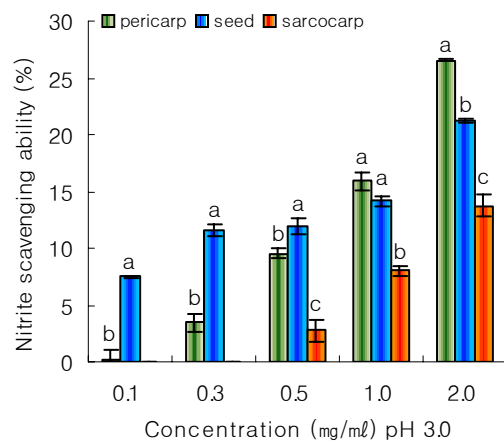


Fig. 6. Nitrite scavenging ability of extracts from *P. trifoliata* at pH 3.0.