

17th World Congress on **Nutrition and Food Chemistry**
&
14th Euro **Obesity and Endocrinology Congress**

September 13-15, 2018 | London, UK

Metabolomic approaches to analyze principal components in pomegranate juice by HPLC and LC-MS/MS to evaluate adulteration in the commercial juice

Chan Lee, Jinah An, Joowon Lim, Bogyu Choi and Joong Hyuck Ahn
Chung Ang University, Republic of South Korea

Pomegranate is one of the expensive fruit due to its short harvest season. Therefore, adulterated pomegranate juice, mixed with other chief fruit juice, can lead economic benefit to Food Company. In order to distinguish pure pomegranate juice with its adulterated juice, the major components of pomegranate juice were analyzed together with grape and peach juices mainly used for manufacturing the adulterated pomegranate juice. Organic acids, polyphenols and flavonoids were analyzed using HPLC and LC-MS/MS. Malic acid and citric acid were selected as major organic compounds to evaluate purity of pomegranate juice and tartaric acid was chosen for grape juice. Commercial pomegranate and peach juice products were collected in domestic markets and polyphenol and flavonoids were compared after LC-MS/MS metabolomic research. The difference in major metabolites between pure pomegranate juice groups and other juice groups were clearly found through principal component analysis (PCA). The OPLS-DA (S-plot and VIP-plot) was used to identify metabolites exhibiting significant differences between pomegranate and peach and 47 metabolites were identified in this study. Among them, five flavonoids can be selected as indicators to compare pure pomegranate juice with adulterated pomegranate juice. This study offers analytical method to evaluate the adulteration of pomegranate juice with other fruit juices.

chanlee@cau.ac.kr