

# Determination of polyphenols in three *Capsicum annuum* L. (bell pepper) varieties using high-performance liquid chromatography-tandem mass spectrometry: their contribution to overall antioxidant and anticancer activity

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## Abstract

A mixture of polyphenol components was isolated from the fruits of *C. annuum* L. cv. Cupra, *C. annuum* L. cv. Orange glory, and *C. annuum* L. cv. ST4712 (CLST), via 70% methanol extraction followed by column chromatography over silica gel. The polyphenol components of the mixture were analyzed via HPLC-MS/MS and compared with the reported data. Three cinnamic acid derivatives and five flavonoid components in the fruits of the three varieties were identified for the first time in this study. The antioxidant activity and anticancer effect of the polyphenol mixtures of the three fruits were determined. The antioxidant and anticancer activities of CLST were substantially higher than those of *C. annuum* L. cv. Cupra and *C. annuum* L. cv. Orange glory. The high activities of CLST were attributed to the much higher concentration of quercetin derivatives in CLST.

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