

Flavonoid Profiles in *Vitis* spp.

Hye-Jeong Park, Hyeon-Cheol Cha*

Department of Biology, Dankook University, Cheonan 330-714, Korea

Objectives

The important biological effect of flavonoids is their ability to act as antioxidants (Karakaya & Nehir 1999). Food-derived flavonoids, such as quercetin, kaempferol and myricetin, have antimutagenic and anticarcinogenic effects *in vitro* and *in vivo* (Hertog et al. 1992).

In this work, we analyse flavonol profiles in the leaves of four grapevines cultivars: *V. labruscana* 'Kyoho' is tetraploid with dark purple exocarp, whereas the others are *V. vinifera* and diploids with different exocarp colors, 'Muscat Bailey A' with dark purple, 'Neo Muscat' with blue and 'Rizamat' with dark red.

Materials and Methods

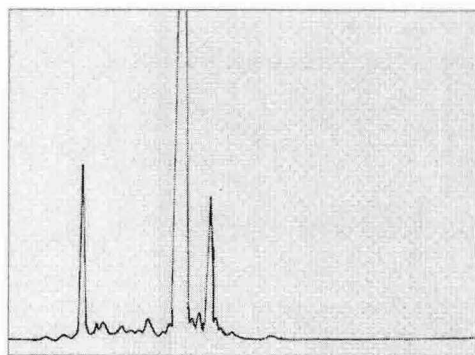
1. Plant materials: The leaves of four grape cultivars, 'Kyoho', 'Muscat Bailey A', 'Neo Muscat' and 'Rizamat' were harvested at August in 2002.
2. Extraction and analysis of flavonoids: For flavonoid analysis

freeze-dried leaves were extracted in 85% MeOH. Preliminary analysis of the flavonoid extracts was employed by 2-D TLC. Purified flavonoids were identified by employing a combination of UV spectral analysis, acid hydrolyses, Rf values, retention times, and co-chromatography with standard using HPLC and TLC by Harbone (1980) and Markham (1982).

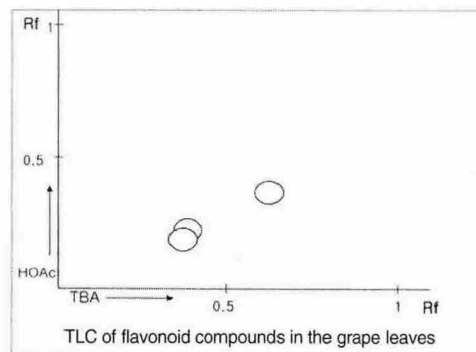
Results and Discussion

Several flavonoid compounds were identified from these grape cultivars. All of them were glycosylated derivatives of the following flavonols; kaempferol, quercetin, and isorhamnetin. Among them quercetin glycosylated derivatives was common flavonol presented in four cultivars and major compound. But, the others were differently distributed in specific cultivars. These differences imply that composition of flavonols is unique to cultivars of grapevines.

So, flavonol profiles may be used to provide a useful tool for the identification at cultivars level in grapevine.



Flavonol peaks by HPLC



2D-TLC