

# Simultaneous determination of flavonoids in stem and leaves of twelve Formosa Vitaceae plants and the antioxidant effects

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In this study, twelve Vitaceae plants which are grown in Taiwan, including the leaf of *Ampelopsis glandulosa*, the stem of *Vitis* Golden muscat, the stem of *Vitis* Honey red, the stem of *Vitis vinifera*, the stem and leaf of *Vitis thunbergii*, the stem and leaf of *Cayratia formosana*, the stem and leaf of *Tetrastigma umbellatum*, *Ampelopsis radix* and the stem of *Ampelopsis cantoniensis* was collected. The total phenolic content of the plants was determined by HPLC-PDA method. The DPPH and AAPH free radical scavenging effects for antioxidant activity also were determined. The 50% ethanol extract of the stem of *Cayratia formosana* contented the highest marker substances and the total content of quercetin and apigenin is 76.9 mg/g. The next one is 50% ethanol extract of the stem of *Vitis thunbergii* and the total content of resverastrol and apigenin is 23.9 mg/g. However, the content of marker substances in the stem of *Ampelopsis glandulosa*, the stem and leaf of *Vitis vinifera*, the leaf of Golden muscat and Honey red were lower than LOD. The range of SC<sub>50</sub> of DPPH antioxidant activity was 5.3 - 357.0 µg/mL. The 50% ethanol extract of the stem of *Ampelopsis cantoniensis*, *Ampelopsis radix*, the leaf and the stem of *Tetrastigma umbellatum*, the stem of *Vitis thunbergii*, the stem of *Vitis golden muscat* and the stem of *Vitis* honey red showed a significant dose and time-dependent manner on AAPH induced erythrocyte haemolysis assay.

Keywords: Vitaceae, HPLC-PDA, antioxidant, quercetin, apigenin, resverastrol