

Capillary zone electrophoresis with UV detection at 200 nm was developed for the determination of four phenolic acids and four flavonoids in plant material. The electrophoretic behavior of phenolic compounds was investigated to optimize their separation as a function of buffer pH, buffer concentration. A 50m mM borate buffer, pH 9 was found most favorable. The separation was obtained with fused-silica capillary column (50 cm x 50  $\mu$ m I.D.) an applied voltage of 25 kV and a temperature of 25°C. For increase injection volume and decrease the detection limits was performed by applying *Large-volume sample stacking with polarity switching*. The limits of detection were between 0,006 and 0,014  $\mu$ g/ml. The method was used to determine these compounds in methanolic extract of *Orthosiphon stamineus* leaves that contained 710,9  $\mu$ g g<sup>-1</sup> pulverized drug of rosmarinic acid and 38,2  $\mu$ g g<sup>-1</sup> of caffeic acid. About a 60-fold enhancement in senzitivity, relative to a conventional injection, was demonstrated in a real sample.