

Title Determination of levodopa by capillary zone electrophoresis using an acidic phosphate buffer and its application in the analysis of beans

Author Xiaofeng Chen, Jiyou Zhang, Honglin Zhai, Xingguo Chen and Zhide Hu

Citation Food Chemistry Volume 92, Issue 2, September 2005, Pages 381-386

Keyword Levodopa; Capillary zone electrophoresis; Apparent dissociation constant; Broad bean; Lentil

### **Abstract**

A simple capillary zone electrophoresis method has been developed for the quantification of levodopa in broad bean and lentil. The dependence of effective mobility of levodopa on pH was investigated in the range of 1.64–11.20; and the simulated apparent dissociation constant values of levodopa were 2.30, 8.11 and 9.92, respectively, which were consistent with literature values. Meanwhile, we obtained the isoelectric point for levodopa was 5.20. Levodopa could be well separated from sample matrix and determined with conditions of 35 mM  $\text{NaH}_2\text{PO}_4$ , pH 4.55, 17.5 kV and 30 °C. A plot of the peak area on levodopa concentration was linear over the range of 5.0–300  $\mu\text{g/mL}$  with a correlation coefficient of 0.9994. The method was validated for the quantification of levodopa in beans. The recoveries of added levodopa in different samples were 99.8% and 105.0%, respectively.