





In recent years, the cases of the wrong label of food origin was often happened in our life. This food adulteration influence consumers. However, tea leaves were hard to distinguish with appearance and flavor. Although there were many laws prohibited the false declaration of food origin in Taiwan, the examination based on the sense of taste was subjective. In this study, we hope to develop objective method to discriminate different origin of oolong tea. After extraction, the samples were analyzed by a high performance liquid chromatography instrument equipped with chromatograms and electrochemical detector. The signals of peaks in chromatograms and electrochemical detector were simultaneously recorded and used in constructing the principle component analysis (PCA). The results present the constructed PCA diagram by UV absorbance and electrochemical signal that could be used to distinguish the differences between the tea from Taiwan or from Vietnam and even the differences of production year and season. In addition, we tried to find the key signal of PCA classified factor, so we utilized the stepwise backward selection and found five signals expressed the importance in distinguishing the tea production regions finally. We expected to develop a quick and sensitive analytical system for traceability and search the key signals.