CORRELATION STUDIES BETWEEN ELECTRONIC NOSE RESPONSE AND HEADSPACE VOLATILES OF EURYCOMA LONGIFOLIA EXTRACTS

Abstract

Most herbs have their own characteristic smell due to the presence of volatile compounds. Traditionally, volatiles are analyzed by using sophisticated and expensive gas chromatography (GC) in tandem with a selective mass spectrometric (MS) detector. An alternative approach is described based on the use of an electronic nose. The approach is much simpler than the traditional GC–MS counterparts, but providing key information of the samples analyzed. Using lipids and gas chromatography stationary phase materials with different polarities as sensing membranes, a quartz crystal microbalance smell sensor array has been developed for the analysis of traditional medicinal plants. The headspace vapors of different types of Tongkat Ali (*Eurycoma longifolia*) extracts were analyzed by the smell sensor and GC–MS. Correlation between the sensor response and the identified compounds were studied using principal component analysis. Some of the identified compounds exhibited good correlation with the quartz crystal microbalance (QCM) sensor array data.

Keywords: Electronic nose; Lipids; Medicinal plants; *Eurycoma longifolia*