

Quality assessment of steviol glycosides in commercial stevia extracts from local market in Malaysia

ABSTRACT

Extracts from leaves of *Stevia rebaudiana* Bertoni, steviol glycosides are used to sweeten food and beverages. It has been approved as sweeteners in many countries all over the world. The majority findings show there is no toxicity in steviol glycosides. However, the complex purification process on commercial stevia has caused its authenticity to be challenged and discussed. Furthermore, the safety of commercial stevia extract in Malaysia has been in query. Therefore, the aim of the present study was to screen and determine the quality of commercial stevia extract from local market in Malaysia, in comparison to the standard solution of steviol glycosides obtained from the leaves of *Stevia rebaudiana*. The present study analysed and compared three independent commercial stevia samples by using High Liquid Performance Chromatography (HPLC), Liquid Chromatography-Mass Spectrometry (LC-MS) and Fourier Transform Infrared Spectroscopy (FTIR). The results showed that the commercial stevia extracts have different qualities of steviol glycosides; in terms of the steviol glycosides content and composition. It is of a remarkable fact that all three analytical methods showed no steviol glycosides were able to be detected in commercial stevia Sample 1. Sample 2 was found to contain the highest concentration of steviol glycosides according to HPLC analysis, while Sample 3 showed the most identical compounds to the standard steviol glycosides according to FTIR analysis. The present study shows the different composition and quality of steviol glycosides in commercial stevia extracts, which warrants further investigation.

Keyword: *Stevia rebaudiana*; Commercial stevia extract; Steviol glycosides; HPLC analysis; LC-MS analysis and FTIR analysis