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Comparison of tongkat ali root chemical composition extracted by soxhlet , conventional steam and microwave assisted extraction techniques (Article)

Najmuldeen, G.F.[a], Narayanan, K.[a], Kirubananthan, D.A.P.[a], Faisal, G.G.[b,c]

[a]Faculty of Chemical and Natural Resources Engineering, University Malaysia Pahang, Gambang, Pahang 26300, Malaysia
[b]Department of Fundamental Dental and Medical Sciences, Kulliyya of Dentistry, International Islamic University, Malaysia
[c]Kulliyyah of Dentistry, International Islamic University Malaysia, Kuantan, 25200, Malaysia

Abstract

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Eurycoma longifolia Jack (Tongkat Ali) roots are used in traditional medicines for its wide range of biological effects. The process of extracting out this essential oil from the plant requires a delicate and efficient method. In this research the extract of the essential oil of Eurycoma longifolia's root using Microwave Assisted Extraction (MAE), Soxhlet Extraction and Conventional Steam Extraction (CSE) methods, is characterized to identify the components of essential oil extracted and then to compare the yield percentage and components of the extracts from both methods. The extract obtained was characterized using gas chromatography mass spectroscopy (GC-MS) by comparing the compositions of components present in commercial Tongkat Ali oil stored in the GC-MS library. The findings showed that the MAE gives a maximum yield percentage of 5 % with six chemical components extracted in 20 min while SE and CSE gives high yield percentage of 28.3% in 3 h and 2.5 % in 6 h respectively with only three chemical components extracted . Therefore, MAE is the optimum method for extracting essential oil from Tongkat Ali with a high quality. © 2018 Phcog.Net.

Author keywords

Conventional Steam Extraction (CSE) | Essential oil | Eurycoma longifolia Jack | Microwave Assisted Extraction | Soxhlet Extraction

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Faisal, G.G.; Department of Fundamental Dental and Medical Sciences, Kulliyya of Dentistry, International Islamic University, Malaysia; email:drghasak@iium.edu.my