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GC-MS analysis of metabolites from soxhlet extraction , ultrasound-assisted extraction and supercritical fluid extraction of Salacca zalacca flesh and its alpha-glucosidase inhibitory activity

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Abstract

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Different extraction processes were employed to extract bioactive metabolites from Salacca zalacca flesh by a range of aqueous and organic solvents. The highest extraction yield was obtained by 50% ethanol extract of SE (73.18 ± 4.35%), whereas SFE_1 showed the lowest yield (0.42 ± 0.08%). All extracts were evaluated for in vitro α-glucosidase inhibitory activity , measured by their IC_{50} values in comparison to that of quercetin, the positive control (IC_{50} = 2.7 ± 0.7 µg/mL). The lowest α-glucosidase inhibitory activity was indicated by water extract of SE (IC_{50} = 724.3 ± 42.9 µg/mL) and the highest activity was demonstrated by 60% ethanol extract by UAE (IC_{50} = 16.2 ± 2.4 µg/mL). All extracts were analysed by GC-MS and identified metabolites like carbohydrates, fatty acids, organic acids, phenolic acids, sterols and alkane-based compounds etcetera that may possess the potential as α-glucosidase inhibitor and may attribute to the α-glucosidase inhibitory activity . © 2019, © 2019 Informa UK Limited, trading as Taylor & Francis Group.

Author keywords

GC-MS | metabolite profiling | Salacca zalacca | α-glucosidase

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