

[< Back to results](#) | 1 of 1[Export](#) [Download](#) [Print](#) [E-mail](#) [Save to PDF](#) [Add to List](#) [More...](#)[Full Text](#) [View at Publisher](#)Pharmacognosy Research
Volume 10, Issue 4, October-December 2018, Pages 385-390

Antioxidant and α -glucosidase inhibitory activities and gas chromatography-mass spectrometry profile of salak (*Salacca zalacca*) fruit peel extracts (Article)

Saleh, M.S.M.^a, Siddiqui, M.J.^a [✉](#), Soad, S.Z.M.^a, Murugesu, S.^a, Khatib, A.^a, Rahman, M.M.^b [👤](#)^aDepartment of Pharmaceutical Chemistry, Kulliyah of Pharmacy, International Islamic University Malaysia, Indera Mahkota, Kuantan, Pahang, 25200, Malaysia^bInstitute of Community Health Development and Quality of Life, Universiti Sultan Zainal Abidin, Kuala Nerus, Terengganu, Malaysia

Abstract

[View references \(32\)](#)

Background: *Salacca zalacca* or better known as salak fruit is widely distributed in tropical and subtropical countries, and it is traditionally used to treat diabetes. This study was aimed to investigate the salak peel extracts for their biological and chemical activities. Also, the chemical profile of the most promising extract was analysed on gas chromatography-mass spectrometry (GC-MS). Materials and Methods: The peel extracts were prepared by maceration process at room temperature with different ratio of ethanol/water. All the extracts were determined for their α -glucosidase inhibitory activity using α -glucosidase enzyme. The antioxidant activities of the extracts were determined through their Ferric reducing antioxidant power assay (FRAP) and 2,2-diphenyl-1-picrylhydrazyl (DPPH). The chemical constituents of salak peel extracts were analysed using gas chromatography-mass spectrometry (GC-MS). Results: Phytochemical screening showed the presence of phenolic and flavonoid contents in all the extracts. About 100% ethanol extract shows the highest phenolic content ($116.70 \pm 0.764 \mu\text{g/mL}$) while 60% ethanol extract has the lowest content $18.65 \pm 1.155 \mu\text{g/ml}$ using gallic acid as a reference. 100% ethanol extract was observed to exhibit highest radical scavenging, ferric reducing antioxidant power (FRAP), and α -glucosidase inhibitory activities (IC_{50} : $49.45 \pm 3.87 \mu\text{g/mL}$, $144.81 \pm 3.72 \mu\text{g AAE/g}$, IC_{50} : $11.62 \pm 0.67^b \mu\text{g/mL}$), respectively. Water extracts had the lowest FRAP, radical scavenging activity as well as α -glucosidase activity. The phytochemical investigation on GC-MS showed the presence of active compounds in salak fruit peel extracts. Conclusion: Salak fruit peels showed the highest antioxidant as well as α -glucosidase inhibitory activities. Phytochemical analysis on GC-MS confirms the presence of gallic acid, linoelaidic acid, palmitic acid, α -tocopherol, and steric acid which may contribute to α -glucosidase inhibitory activity. © 2018 Pharmacognosy Research Published by Wolters Kluwer - Medknow.

SciVal Topic Prominence [📄](#)

Topic: [alpha-Glucosidases](#) | [alpha-Amylases](#) | [phenolic content](#)Prominence percentile: 89.738 [📄](#)

Author keywords

Antioxidant [phytochemical screening](#) [phytochemical screening](#) [Salak fruit](#) [Salak fruit](#) [total phenolic](#)
[total phenolic](#) [\$\alpha\$ -glucosidase inhibitory activity](#) [\$\alpha\$ -glucosidase inhibitory activity](#) Key words: Antioxidant

Indexed keywords

Metrics [📄](#)

0 Citations in Scopus

0 Field-Weighted Citation Impact



PlumX Metrics [📄](#)

Usage, Captures, Mentions, Social Media and Citations beyond Scopus.

Cited by 0 documents

Inform me when this document is cited in Scopus:

[Set citation alert >](#)[Set citation feed >](#)

Related documents

Salacca edulis: Nutritional composition, bioactive compounds and health benefits

Lasekan, O. , Shittu, R. , Teoh, L.S. (2018) *Agricultural Research Updates. Volume 24*Correlation of FT-IR fingerprint and α -glucosidase inhibitory activity of salak (*salacca zalacca*) fruit extracts utilizing orthogonal partial least squareSaleh, M.S.M. , Siddiqui, M.J. , Mat Soad, S.Z. (2018) *Molecules*Evaluation of tyrosinase inhibitory activity in Salak (*Salacca zalacca*) extracts using the digital image-based colorimetric methodMoonrungsee, N. , Peamaroon, N. , Boonmee, A. (2018) *Chemical Papers*[View all related documents based on references](#)

NEW! SciVal Topic Prominence is now available in Scopus.

Which Topic is this article related to? [View the Topic.](#)

EMTREE drug terms:

alkaloid alpha glucosidase alpha tocopherol ascorbic acid gallic acid palmitic acid
phenol derivative plant extract quercetin Salacca zalacca extract tannin derivative
unclassified drug

Find more related documents in
Scopus based on:

Authors > Keywords >

EMTREE medical terms:

analysis of variance antioxidant activity Article carbohydrate metabolism controlled study
correlation analysis DPPH radical scavenging assay enzyme activity enzyme inhibition
ferric reducing antioxidant power assay mass fragmentography medicinal plant nonhuman
oxidative stress phytochemistry plant yield Salacca zalacca

Chemicals and CAS Registry Numbers:

alpha glucosidase, 9001-42-7; alpha tocopherol, 1406-18-4, 1406-70-8, 52225-20-4, 58-95-7, 59-02-9; ascorbic acid, 134-03-2, 15421-15-5, 50-81-7; gallic acid, 149-91-7; palmitic acid, 57-10-3; quercetin, 117-39-5

ISSN: 09748490

Source Type: Journal

Original language: English

DOI: 10.4103/pr.pr_7_18

Document Type: Article

Publisher: Wolters Kluwer Medknow Publications

References (32)

[View in search results format >](#)

All [Export](#) [Print](#) [E-mail](#) [Save to PDF](#) [Create bibliography](#)

- 1 Kim, D., Ahn, M., Jung, J., Kwon, S., Park, E.-J., Koo, K.H., Woo, J.-M.
Perspectives on the Market Globalization of Korean Herbal Manufacturers: A Company-Based Survey ([Open Access](#))
(2015) *Evidence-based Complementary and Alternative Medicine*, 2015, art. no. 515328. Cited 3 times.
<http://www.hindawi.com/journals/ecam/contents.html>
doi: 10.1155/2015/515328

[View at Publisher](#)

- 2 Supriyadi, Suhardi, Suzuki, M., Yoshida, K., Muto, T., Fujita, A., Watanabe, N.
Changes in the volatile compounds and in the chemical and physical properties of snake fruit (*Salacca edulis* Reinw) cv. Pondoh during maturation
(2002) *Journal of Agricultural and Food Chemistry*, 50 (26), pp. 7627-7633. Cited 26 times.
doi: 10.1021/jf020620e

[View at Publisher](#)

- 3 Dembitsky, V.M., Poovarodom, S., Leontowicz, H., Leontowicz, M., Vearasilp, S., Trakhtenberg, S., Gorinstein, S.
The multiple nutrition properties of some exotic fruits: Biological activity and active metabolites
(2011) *Food Research International*, 44 (7), pp. 1671-1701. Cited 127 times.
doi: 10.1016/j.foodres.2011.03.003

[View at Publisher](#)