



< Back to results | 1 of 1

[Export](#)
[Download](#)
[Print](#)
[E-mail](#)
[Save to PDF](#)
[Add to List](#)
[More... >](#)
[Full Text](#) | [View at Publisher](#)

Document type

Article

Source type

Journal

ISSN

09753575

DOI

10.5530/pj.2021.13.131

View more [▼](#)*Pharmacognosy Journal* • Open Access • Volume 13, Issue 4, Pages 1014 - 1018 • July 2021

Cytotoxic activity of eurycoma longifolia jack root extract against nasopharyngeal carcinoma cell line

 Kajahmohideen N.H.^a, Razi S.N.^a, Faisal G.G.^b [✉](#), Ashour A.E.^c, Kusumawardani A.^d, Makky E.A.^e, Ibrahim O.E.^f
[Save all to author list](#)
^a Kulliyyah of Dentistry, IIUM, Malaysia^b Department of fundamental dental and medical sciences, Kulliyyah of Dentistry, IIUM, Malaysia^c Basic Medical Science Unit, Kulliyyah of Medicine, IIUM, Malaysia^d Department of Restorative Dentistry, Kulliyyah of Dentistry, IIUM, MalaysiaView additional affiliations [▼](#)

Abstract

Author keywords

SciVal Topics

Funding details

Abstract

Background: Eurycoma longifolia (E. longifolia) or Tongkat Ali is a tree that grows in southeast Asia, the roots of which contain bioactive components that exhibit cytotoxic properties against various cancer cell lines. However, no study has been conducted to relate the cytotoxic properties against nasopharyngeal carcinoma (NPC), a type of cancer that shows poor prognosis for metastatic disease. The purpose of this study was to determine whether the E. longifolia root extract exerts cytotoxic activity against nasopharyngeal carcinoma (ORL-115) cell lines. **Materials and Method:** E. longifolia root extracts were obtained through Soxhlet extraction method and by using two different solvents; ethanol and dichloromethane. MTS assay was used to evaluate the cytotoxic effect of the root extracts against ORL-115 cell line for three different incubation time which were 24-hour, 48-hour and 72-hour. **Results:** Ethanol extract was significantly more potent compared to DCM extract. Ethanol extract exhibited lower IC₅₀ value compared to DCM extract. The IC₅₀ of ethanol extract were 232.1 µg/ml, 66.86 µg/ml and 42.6 µg/ml. Meanwhile the IC₅₀ of DCM extract were 678.87 µg/ml, 136.71 µg/ml,

Cited by 0 documents

Inform me when this document is cited in Scopus:

[Set citation alert >](#)

Related documents

Differentially expressed genes on the growth of mouse Leydig cells treated with standardised Eurycoma longifolia extract

 AHMED, N.A.K. , LIM, S.K. , PANDIAN, G.N. (2020) *Molecular Medicine Reports*

Epstein-Barr Virus-Positive Large Cell Neuroendocrine Carcinoma of the Nasopharynx: Report of a Case with Complete Clinical and Radiological Response After Combined Chemoradiotherapy

 Wasserman, J.K. , Papp, S. , Hope, A.J. (2018) *Head and Neck Pathology*

A 5-year multicenter clinical experience in local and locally advanced nasopharyngeal carcinoma from a non-endemic region: A retrospective cohort study

 Aslan, F. , Ilhan, A. , Yildiz, F. (2021) *UHOD - Uluslararası Hematoloji-Onkoloji Dergisi*

View all related documents based on references

Find more related documents in Scopus based on:

Authors > Keywords >

73.72 µg/ml for 24-hour, 48-hour and 72-hour incubation period respectively. The cytotoxic activity of both extracts increased as the incubation time prolonged. The cytotoxic activity of ethanol extract at each incubation time was significantly different from DCM extract except at 72 hours. Conclusion: *E. longifolia* root extracts exerted cytotoxic activity against the nasopharyngeal carcinoma (ORL-115) cell line. Ethanol extract exhibited lower IC₅₀ value compared to DCM extract. The cytotoxic activity of both extracts were dose dependent and time dependent. © 2021 Phcogj.Com. This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International license.

Author keywords

Cytotoxic activity; *E. longifolia*; Nasopharyngeal carcinoma

SciVal Topics 

Funding details

References (10)

[View in search results format >](#)

☐ All

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

- ☐ 1 Chua, M.L.K., Wee, J.T.S., Hui, E.P., Chan, A.T.C.
Nasopharyngeal carcinoma
(2016) *The Lancet*, 387 (10022), pp. 1012-1024. Cited 722 times.
<http://www.journals.elsevier.com/the-lancet/>
doi: 10.1016/S0140-6736(15)00055-0
[View at Publisher](#)
- ☐ 2 Petersson, F.
Nasopharyngeal carcinoma: A review
(2015) *Seminars in Diagnostic Pathology*, 32 (1), pp. 54-73. Cited 120 times.
<http://www.elsevier.com/inca/publications/store/6/2/3/1/8/2/index.htm>
doi: 10.1053/j.semmp.2015.02.021
[View at Publisher](#)
- ☐ 3 Lee, A.W.M., Ma, B.B.Y., Ng, W.T., Chan, A.T.C.
Management of nasopharyngeal carcinoma: Current practice and future perspective
(2015) *Journal of Clinical Oncology*, 33 (29), pp. 3356-3364. Cited 360 times.
<http://jco.ascopubs.org/content/33/29/3356.full.pdf+html>
doi: 10.1200/JCO.2015.60.9347
[View at Publisher](#)
- ☐ 4 Mohamed, A, Vejjayan, J, Yusoff, M.
Review on *Eurycoma longifolia* Pharmacological and Phytochemical Properties
(2015) *Journal of Applied Sciences*, 15 (6), pp. 831-844. Cited 19 times.
- ☐ 5 Al-Salahi, R., Marzouk, M., Ashour, A.E., Alswaidan, I.
Synthesis and antitumor activity of 1,2,4-triazolo[1,5-a]quinazolines ([Open Access](#))
(2014) *Asian Journal of Chemistry*, 26 (7), pp. 2173-2176. Cited 24 times.
http://www.asianjournalofchemistry.co.in/Journal/ViewArticle.aspx?ArticleID=26_8_66
doi: 10.14233/ajchem.2014.16849
[View at Publisher](#)

- 6 Meng, D., Li, X., Han, L., Zhang, L., An, W., Li, X.
Four new quassinoids from the roots of *Eurycoma longifolia* Jack
(2014) *Fitoterapia*, 92, pp. 105-110. Cited 22 times.
doi: 10.1016/j.fitote.2013.10.009
[View at Publisher](#)
-
- 7 Rehman, S.U., Choe, K., Yoo, H.H.
Review on a traditional herbal medicine, *eurycoma longifolia* Jack (Tongkat Ali): Its traditional uses, chemistry, evidence-based pharmacology and toxicology ([Open Access](#))
(2016) *Molecules*, 21 (3), art. no. 331. Cited 78 times.
<http://www.mdpi.com/1420-3049/21/3/331/pdf>
doi: 10.3390/molecules21030331
[View at Publisher](#)
-
- 8 Nurhanan, M.Y., Hawariah, L.P.A., Ilham, A.M., Shukri, M.A.M.
Cytotoxic effects of the root extracts of *Eurycoma longifolia* Jack
(2005) *Phytotherapy Research*, 19 (11), pp. 994-996. Cited 30 times.
doi: 10.1002/ptr.1759
[View at Publisher](#)
-
- 9 Qi, G., Chen, J., Shi, C., Wang, Y., Mi, S., Shao, W., Yu, X., (...), Huang, J.
Cinnamic Acid (CINN) Induces Apoptosis and Proliferation in Human Nasopharyngeal Carcinoma Cells ([Open Access](#))
(2016) *Cellular Physiology and Biochemistry*, 40 (3-4), pp. 589-596. Cited 21 times.
www.karger.ch/journals/cpb/cpb_jh.htm
doi: 10.1159/000452572
[View at Publisher](#)
-
- 10 Liu, R., Qu, Z., Lin, Y., Lee, C.-S., Tai, W.C.-S., Chen, S.
Brevilin A induces cell cycle arrest and apoptosis in nasopharyngeal carcinoma ([Open Access](#))
(2019) *Frontiers in Pharmacology*, 10 (MAY), art. no. 594. Cited 11 times.
<http://www.frontiersin.org/Pharmacology>
doi: 10.3389/fphar.2019.00594
[View at Publisher](#)

🔍 Faisal, G.G.; Department of fundamental dental and medical sciences, Kuliyah of Dentistry, IIUM, Malaysia; email: drghassak@yahoo.com
© Copyright 2021 Elsevier B.V., All rights reserved.

About Scopus

What is Scopus
Content coverage
Scopus blog
Scopus API
Privacy matters

Language

日本語に切り替える
切换到简体中文
切换到繁體中文
Русский язык

Customer Service

Help
Contact us

