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Phytochemical and cytotoxicity evaluation of lagerstroemia speciosa (L.) leaves extract by MCF-7 cell line and brine shrimp lethality bioassay (Article)

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Abstract

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This study aimed to investigate the cytotoxicity of Lagerstroemia speciosa (L.) leaves crude extract. It has been reported to show various bioactivities. The phytochemical screening of the extract has been carried qualitatively. The cytotoxic effect was determined through in vitro MTT assay of MCF-7 cell line, and brine shrimp lethality bioassay. The presence or absence of alkaloid, carbohydrate, glycoside, saponin, terpene, steroid, phenol, and flavonoid in the extract was determined through the qualitative tests. The extract showed cell viability of 100% (1.95–3.9 µL/mL), 96% (1.95 µL/mL), ≈ 95% (3.9–15.62 µL/ mL) and 88% (250 µL/mL) while the mortality of brine shrimp nauplii was from 5% to 10% (7.8 – 125 µL/mL) respectively. For both assays, DMSO of 1 & 0.1% were used as vehicle controls, while the potassium dichromate as the positive control for the brine shrimp only. These results proved the leaves extract to be non-toxic.

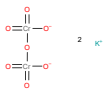
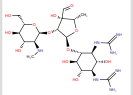
SciVal Topic Prominence

Topic: Corosolic Acid | Lagerstroemia | Lythraceae

Prominence percentile: 66.988

Chemistry database information

Substances



ferric chloride
saponin

Author keywords

Brine shrimp nauplii | Crude extract; Cytotoxicity | Lagerstroemia speciosa (L.) leaves | MCF-7 cell line | MTT assay | Phytochemicals

Indexed keywords

EMTREE drug terms: alkaloid, carbohydrate, ferric chloride, flavonoid, glycoside, Lagerstroemia speciosa extract, phenol, phytochemical, plant extract, saponin, terpene, unclassified drug

EMTREE medical terms: Artemia, Article, bioassay, cell viability, controlled study, cytotoxicity, DPPH radical scavenging assay, gene expression, hatching, IC50, in vitro study, Lagerstroemia speciosa, LC50, LD50, lethality, MCF-7 cell line, MTT assay, nonhuman, phytochemistry, plant leaf

Chemicals and CAS Registry Numbers:

ferric chloride, 7705-08-0; phenol, 108-95-2, 3229-70-7; saponin, 8047-15-2

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References (15)

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1 Azad, AK, Rahman, MK, Sunzida, NK.
Acute oral toxicity Study on Malaysian traditional herb: Lagerstroemia speciosa L.(Banaba)
(2015) *J Pharmacogn Phytochem*, 4, p. 228. Cited 7 times.

2 Lad, PN, Patel, NC, Shah, VN, Mesariya, PS.
Evaluation of Hepatoprotective and Antioxidant Activity of Roots of Lagerstroemia speciose pers
(2011) *Int J Pharm Res Dev*, 3, pp. 110-117. Cited 3 times.

3 Saumya, S.M., Basha, P.M.
Antioxidant effect of Lagerstroemia speciosa Pers (Banaba) leaf extract in streptozotocin-induced diabetic mice

(2011) *Indian Journal of Experimental Biology*, 49 (2), pp. 125-131. Cited 26 times.
http://nopr.niscair.res.in/bitstream/123456789/11006/1/IJEB%2049(2)%20125-131.pdf

4 Hosoyama, H., Sugimoto, A., Suzuki, Y., Sakane, I., Kakuda, T.
Isolation and quantitative analysis of the α-amylase inhibitor in Lagerstroemia speciosa (L.) Pers. (Banaba) (Open Access)

(2003) *Yakugaku Zasshi*, 123 (7), pp. 599-605. Cited 24 times.
http://yakushi.pharm.or.jp/FULL_TEXT/123_7/pdf/599.pdf
doi: 10.1248/yakushi.123.599

View at Publisher

5 Tiwari, P, Kumar, B, Kaur, M, Kaur, G, Kaur, H.
Phytochemical Screening and Extraction: A Review
(2011) *Int Pharm Sci*, 1, pp. 98-106. Cited 646 times.

6 Azad, AK, Sulaiman, WM, Sunzida, NK.
Phytochemical and toxicity evaluation of Phaleria macrocarpa (Scheff.) Boerl by MCF-7 cell line and brine shrimp lethality bioassay
(2016) *Journal of Coastal Life Medicine*, 4 (1), pp. 45-49. Cited 7 times.

7 Trease, GE, Evans, WC.
(2008) *Pharmacognosy*, pp. 488-492. Cited 442 times.
5th Ed. Rrevised with the assistance of Daphne Evans. Elsevier Publishers, Netherlands

8 Krishnaraju, AV, Rao, TV, Sundararaju, D, Vanisree, M, Tsay, HS, Subbaraju, GV.
Biological screening of medicinal plants collected from Eastern Ghats of India using Artemia salina (brine shrimp test)
(2006) *Int. J. Appl. Sci. Eng*, 4 (2), pp. 115-125. Cited 80 times.
Sep 1

9 Azad, AK, Jainul, MA, Labu, ZK.
Cytotoxic activity on brine shrimp, MCF-7 cell line and thrombolytic potential: seven different medicinal plant leaves extract
(2018) *Journal of Scientific Research*, 10 (2), pp. 175-185. Cited 2 times.
May 1

10 Meyer, B.N., Ferrigni, N.R., Putnam, J.E., Jacobsen, L.B., Nichols, D.E., McLaughlin, J.L.
Brine shrimp: A convenient general bioassay for active plant constituents

(1982) *Planta Medica*, 45 (1), pp. 31-34. Cited 2819 times.
doi: 10.1055/s-2007-971236

View at Publisher

11 Silva, T.M.S., Nascimento, R.J.B., Batista, M.M., Agra, M.F., Camara, C.A.
Brine shrimp bioassay of some species of Solanum from Northestern Brazil
(Open Access)

(2007) *Brazilian Journal of Pharmacognosy*, 17 (1), pp. 35-38. Cited 36 times.
https://www.springer.com/journal/43450
doi: 10.1590/S0102-695X2007000100008

View at Publisher

12 Ramachandran, S., Vamsikrishna, M., Gowthami, K.V., Heera, B., Dhanaraju, M.D.

Assessment of cytotoxic activity of agave cantula using brine shrimp (Artemia salina) lethality bioassay (Open Access)

(2011) *Asian Journal of Scientific Research*, 4 (1), pp. 90-94. Cited 20 times.
http://docsdrive.com/pdfs/ansinet/ajsr/2011/90-94.pdf
doi: 10.3923/ajsr.2011.90.94

View at Publisher

13 Chanda, S., Baravalia, Y.

Brine shrimp cytotoxicity of Caesalpinia pulcherrima aerial parts, antimicrobial activity and characterisation of isolated active fractions

(2011) *Natural Product Research*, 25 (20), pp. 1955-1964. Cited 21 times.
doi: 10.1080/14786419.2010.530600

View at Publisher

14 Al-Mahmoud, M.S., Alali, F.Q., Tawaha, K., Qasaymeh, R.M.

Phytochemical study and cytotoxicity evaluation of Colchicum stevenii Kunth (Colchicaceae): A Jordanian meadow saffron

(2006) *Natural Product Research*, 20 (2), pp. 153-160. Cited 16 times.
doi: 10.1080/14786410500046224

View at Publisher

15 Fang, S.-T., Kong, N.-N., Yan, B.-F., Yang, C.-Y., Wang, J.-H., Liu, S.-J., Jin, H.-Z., (...), Xia, C.-H.

Chemical constituents and their bioactivities from the fruits of Vitex negundo var. cannabifolia

(2016) *Natural Product Research*, 30 (24), pp. 2856-2860. Cited 6 times.
www.tandf.co.uk/journals/titles/14786419.asp
doi: 10.1080/14786419.2016.1174228

View at Publisher

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