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‹ Back to results | 1 of 1

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Cytotoxic and xanthine oxidase inhibitory activities of chemical constituents of alphonsea cylindrica king (Article)

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Abstract

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This study aimed to investigate the chemical constituents from Alphonsea cylindrica as well as their cytotoxic and xanthine oxidase inhibitory activities. The chemical compounds were isolated and purified by various chromatographic techniques and their structures were elucidated via modern spectroscopic techniques including NMR, MS, IR, UV and comparison with literature. A study on the barks of A. cylindrica has found eleven known compounds were identified as stigmasterol (1), isoursuline (2), cyathocaline (3), kinabaline (4), muniranine (5), isooncodine (6), iraqiine (7), O-methylmoschatoline (8), kareemine (9), atherospermidine (10) and N-methylouregidione (11). The cytotoxic effect of hexane, DCM and methanol of bark of A. cylindrica as well as the isolated compounds; 1, 2, 3, 4, 5, 7, 8, 9 and 10 were estimated on MCF-7 human breast cancer cells and isoursuline possessed the most potent inhibitory activity with IC_{50} value of 33 µg/ml. Eight compounds 1, 3, 4, 5, 6, 8, 10 and 11 displayed moderate inhibitory activity effect with IC_{50} < 100 µM against xanthine oxidase. As a conclusion, eleven compounds have been isolated from the bark of A. cylindrica King. Some of the compounds also showed potential against cytotoxicity and xanthine oxidase inhibitory activities. The findings of this study can enhance the understanding of the chemotaxonomy aspect of the A. cylindrica as well as its potential in traditional and modern medicine.

SciVal Topic Prominence

Topic: Annonaceae | Alkaloids | Chemical composition

Prominence percentile: 79.804

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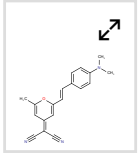
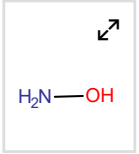

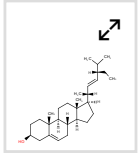
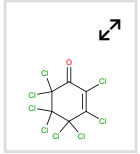
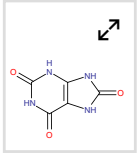
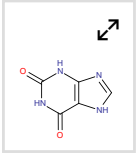

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Chemicals and CAS Registry Numbers:

stigmasterol, 83-48-7; xanthine oxidase, 9002-17-9

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1 Pezzuto, J.M.
Plant-derived anticancer agents

(1997) *Biochemical Pharmacology*, 53 (2), pp. 121-133. Cited 436 times.
www.elsevier.com/locate/biochempharm
doi: 10.1016/S0006-2952(96)00654-5

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2 Shoemaker, R.H.
The NCI60 human tumour cell line anticancer drug screen

(2006) *Nature Reviews Cancer*, 6 (10), pp. 813-823. Cited 1428 times.
doi: 10.1038/nrc1951

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3 Dogan, O., Cubukcu, H.C., Durak, Z.E., Kocaoglu, H., Durak, İ.
Effects of garlic extract on adenosine deaminase, 5' nucleoditase, and xanthine oxidase enzymes in cancerous gastric tissues

(2017) *Biomedical Research (India)*, 28 (13), pp. 6080-6084. Cited 2 times.
http://www.biomedres.info/biomedical-research/effects-of-garlic-extract-on-adenosine-deaminase-5-nucleoditase-and-xanthine-oxidase-enzymes-in-cancerous-gastric-tissues.pdf