Abstract

Context: Balanites aegyptiaca (L.) Delile (Zygophyllaceae) is a tropical tree that has many folk uses in various countries. The bark extract is used for the control of the fresh water snails that act as intermediary host of Schistosoma.

Objective: Study the molluscicidal activity and chemical constituents of seed oil and seed glycosides of B. aegyptiaca against Monacha cartusiana and determine the structure-activity relationship.

Materials and methods: Two bioassay methods (residual film application and the leaf dipping technique) were used to evaluate the toxicity effect of the seed oil and glycosides, in concentrations of 1.000, 0.500, 0.250 and 0.125%. The seed oil was analysed by GC/MS. Acid hydrolysis and chromatographic separation were used to study the seed saponins.

Results: The bioassay of B. aegyptiaca against the land snail, M. cartusiana, indicated the activity of the seed oil and the high activity of the seed saponins. The seed glycosides gave 30.0, 53.3, 73.0 and 73.3% mortality for concentrations of 0.125, 0.250, 0.500 and 1.00%, respectively. The LC50 values were 0.335 and 0.256%, respectively. The seed oil was analysed by GC/MS. Acid hydrolysis of the seed saponins gave a mixture of diosgenin, yamogenin and 3,5-spirostanediene.

Discussion and conclusion: To study the structure-activity relationship, a triterpenoidal saponin and a triterpenoidal saponins rich extract (of Zygophyllum coccenum) were proven to be inactive. Thus, the activity is associated with the steroidal, not triterpenoidal saponins. Moreover, a spirostane aglycone without sugar moiety, was found to be inactive and attained the activity by glycosidation.
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Gingerdione from the rhizomes of Curcuma longa

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Milk thistle (Silybum marianum) for the therapy of liver disease

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Biodegradable pH-responsive alginate-poly (lactic-co-glycolic acid) nano/micro hydrogel matrices for oral delivery of silymarin

El-Sherbiny, IM (El-Sherbiny, Ibrahim M.)[1]; Abdel-Mogib, M (Abdel-Mogib, Mamdouh)[2]; Dawidar, AAM (Dawidar, Abdel-Aziz M.)[2]; Elsayed, A (Elsayed, Ahmed)[2]; Smyth, HDC (Smyth, Hugh D. C.)[1]

Abstract

This study involves the development and characterization of a series of sodium alginate-based pH-responsive hydrogel microspheres encapsulating poly(D,L-lactic-co-glycolic acid) (PLGA) nanoparticles (NPs). The effect of the drying technique (air- or freeze-drying) on the size of the developed particles was determined. Swelling characteristics at different pH values, in vitro biodegradation and moisture contents of both air-dried and freeze-dried hydrogel particles were investigated. The effect of drying method on the morphology of the particles was also studied using SEM and AFM. Then, the developed alginate-PLGA particles were evaluated as potential carriers, through a new approach, to improve the dissolution, bioavailability and oral sustained release of silymarin, as a model of hydrophobic natural therapeutics. The used silymarin was isolated from the seeds of some native milk thistle (Silybum marianum) ecotypes of delta Egypt and was characterized with the aid of several analytical techniques including; H-1 NMR, UV and FTIR. The obtained data showed a considerable effect of the alginate content and the drying method onto the characteristics of the prepared particles. Also, the results demonstrated that the developed alginate-based hydrogel microparticles encapsulating silymarin-loaded PLGA NPs can be used as biodegradable carriers that can confer sustained oral release of silymarin in addition to enhancing its overall dissolution and oral bioavailability. (C) 2010 Elsevier Ltd. All rights reserved.

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KeyWords Plus: THISTLE SILYBUM-MARIANUM; MILK THISTLE; FLAVONOID ANTIOXIDANT; PROTEIN DRUGS; CELLS; MICROSHEERES; FIBROSIS; KINASE; NANOPARTICLES; INHIBITION

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Research Areas: Chemistry; Polymer Science

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Author(s): Zi, XL; Feyes, DK; Agarwal, R
A novel podophyllotoxin lignan from Justicia heterocarpa

Al-Juaid, SS (Al-Juaid, SS); Abdel-Mogib, M (Abdel-Mogib, M)

Abstract

Chromatographic separation of the extract of Justicia heterocarpa T. ANDERS. afforded, in addition to known fatty acids, terpenoids and steroids, a new podophyllotoxin lignan. Structures were elucidated by spectroscopic methods, and the structure of the new lignan was confirmed by single crystal X-ray diffraction studies, which have shown that there is a H-bonding stabilized dimer.

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Author Keywords: Justicia heterocarpa; Acanthaceae; podophyllotoxin lignan; X-ray analysis

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Publisher: PHARMACEUTICAL SOC JAPAN, 2-12-15-201 SHIBUYA, SHIBUYA-KU, TOKYO, 150, JAPAN

Web of Science Categories: Chemistry, Medicinal; Chemistry, Multidisciplinary; Pharmacology & Pharmacy

Research Areas: Pharmacology & Pharmacy; Chemistry

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Two new naphthalene and anthraquinone derivatives from Asphodelus tenuifolius

Abdel-Mogib, M (Abdel-Mogib, M); Basaif, SA (Basaif, SA)

Abstract

Chromatographic separation of an ethanolic extract of rhizomes of Asphodelus tenuifolius Cav, (Asphodelaceae) yielded in addition to P-sitosterol, stigmasterol and two anthraquinone derivatives, 1,8-dimethoxynaphthalene as well as two new naphthalene derivatives. The new compounds were identified as 2-acetyl-8-methoxy-3-methyl-1-naphthol and 2-acetyl-1,8-dimethoxy-3-methylnaphthalene. The separated compounds were identified on the basis of IR, MS, H-1 and C-13 NMR data.

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Abdel-Mogib, Mamdouh J-2267-2012 [View profile at ResearcherID.com]

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Web of Science Categories: Chemistry, Medicinal; Chemistry, Multidisciplinary; Pharmacology & Pharmacy

Research Areas: Pharmacology & Pharmacy; Chemistry

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Author(s): ADINOLFI, M; CORSARO, MM; LANZETTA, R; et al.

Source: PHYTOCHEMISTRY Volume: 28 Issue: 1 Pages: 284-288 DOI: 10.1016/0031-9422(89)85063-0 Published: 1989

6. Title: A NEW CLASS OF ANTHRAQUINONE-ANTHRONE-C-GLYCOSIDES FROM ASPHODELUS-RAMOSUS TUBERS

Author(s): ADINOLFI, M; LANZETTA, R; MARCIANO, CE; et al.


7. Title: [Preliminary study on the chemical constituents and #microbiologic activity of Asphodelus microcarpus (Salzm. et Viv.).]

Foreign Title: Studio preliminare sui costituenti chimici e sulla attivita microbiologica di estratti di Asphodelus microcarpus (Salzm. et Viv.) (View record in MEDLINE)

Author(s): Bonsignore, L; Cottiglia, F; Loy, G; et al.

Source: Bollettino chimico farmaceutico Volume: 137 Issue: 6 Pages: 186-90 Published: 1998-Jun

8. Title: [not available]
9. Title: [not available]
Author(s): COLLENETTE S
Source: WILDFLOWERS SAUDI AR Pages: 78 Published: 1999

10. Title: STRUCTURES OF 4,5-DIMETHOXYPHENANTHRENE-(I) AND 1,8-DIMETHOXYNAPHTHALENE-(II) - DEFORMATION IN STRAINED AROMATIC SYSTEMS AND ANOMALOUS INTERNUCLEAR DISTANCES
Author(s): COSMO, R; HAMBLEY, TW; STERNHELL, S

11. Title: QUANTITATIVE-DETERMINATION AND SEASONAL-VARIATION OF ANTHRAQUINONES OF CERTAIN EGYPTIAN ASPHODELUS SPECIES (View record in MEDLINE)
Author(s): HAMMOUDA, FM; RIZK, AM; SEIFELNA.MM
Source: PHARMAZIE Volume: 29 Issue: 9 Pages: 609-610 Published: 1974

12. Title: QUINONES OF THE LICHEN CETRARIA-CUCULLATA
Author(s): KRIVOSHCHEKOVA, OE; MAXIMOV, OB; STEPANENKO, LS; et al.
Source: PHYTOCHEMISTRY Volume: 21 Issue: 1 Pages: 193-196 DOI: 10.1016/0031-9422(82)80041-1 Published: 1982

Title: LIPIDS OF ASPHODELUS-TENUIFOLIUS CAV SEEDS (View record in MEDLINE)
Author(s): MADAAN, TR; BHATIA, IS
Source: INDIAN JOURNAL OF BIOCHEMISTRY & BIOPHYSICS Volume: 10 Issue: 1 Pages: 55-58 Published: 1973

14. Title: CHEMICAL-CONSTITUENTS OF RHAMNUS-PROCUMBENS - APPLICATION OF C-13 NMR-SPECTROSCOPY IN STRUCTURE ELUCIDATION
Author(s): MAJUMDER, PL; CHATTOPADHYAY, A
Source: JOURNAL OF THE INDIAN CHEMICAL SOCIETY Volume: 62 Issue: 8 Pages:
15. Title: ANTHRAQUINONES OF ASPHODELUS-MICROCARPUS
Author(s): RIZK, AM; ABDELGAW.MM; HAMMOUDA, FM
Source: PHYTOCHEMISTRY Volume: 11 Issue: 6 Pages: 2122-& DOI: 10.1016/S0031-9422(00)90193-6 Published: 1972

16. Title: NEW NAPHTHALDEHYDE FROM HEARTWOOD OF DIOSPYROS-MELANOXYLON
Author(s): SANKARAM, AV; SIDHU, GS
Source: PHYTOCHEMISTRY Volume: 10 Issue: 2 Pages: 458-& DOI: 10.1016/S0031-9422(00)94077-9 Published: 1971

17. Title: THE PRESENCE OF SOME GLYCOSIDASES IN ASPHODELUS-MICROCARPUS
Author(s): SISINI A; PICCI V; SEGNI P; et al.
Source: Bollettino Societa Italiana Biologia Sperimentale Volume: 54 Issue: 19 Pages: 1794-1799 Published: 1978

18. Title: ANTHRAQUINONES IN ASPHODELUS ALBUS MILLER SSP ALBUS
Author(s): UTRILLA, MP; CABO, J; JIMENEZ, J; et al.
Source: PHARMAZIE Volume: 44 Issue: 5 Pages: 358-359 Published: MAY 1989

19. Title: [not available]
Author(s): VONGEMERT JT
Source: AUST J CHEM Volume: 21 Pages: 22023 Published: 1968
The cost and cost-effectiveness of malaria vector control by residual insecticide house-spraying in southern Mozambique: a rural and urban analysis. Authors

Methods: The rural programme is a regional project involving the participation and co-ordination of organizations across three countries in southern Africa and is focussed on control in an area in Mozambique of 7552 km². The second programme focuses on spraying a peri-urban community within a 10-km radius around MOZAL, an aluminium smelter plant of area 410 km². Computed economic and financial costs are presented for all four insecticide families available for use in RHS. A method of computing the effectiveness of an insecticide. 1925. Item Preview.