Molluscicidal activity of Balanites aegyptiaca against Monacha cartusiana

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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-spirostadiene.
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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Author Keywords: Steroidal saponin; triterpenoidal saponin; glycyrrhizic acid; hecogenin acetate
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Gingerdione from the rhizomes of Curcuma longa

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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.)[1,3] ; 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.

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Author(s): Wu, Wei; Wang, Yang; Que, Li

Source: EUROPEAN JOURNAL OF PHARMACEUTICS AND BIOPHARMACEUTICS Volume: 63 Issue: 3 Pages: 288-294 DOI: 10.1016/j.ejpb.2005.12.005 Published: JUL 2006

34. Title: Inhalable alginate nanoparticles as antitubercular drug carriers against experimental tuberculosis

Author(s): Zahoor, A; Sharma, S; Khuller, GK

Source: INTERNATIONAL JOURNAL OF ANTIMICROBIAL AGENTS Volume: 26 Issue: 4 Pages: 298-303 DOI: 10.1016/j.ijantimicag.2005.07.012 Published: OCT 2005

35. Title: A flavonoid antioxidant, silymarin, inhibits activation of erbB1 signaling and induces cyclin-dependent kinase inhibitors, G1 arrest, and anticarcinogenic effects in human prostate carcinoma DU145 cells

Author(s): Zi, XL; Grasso, AW; Kung, HJ; et al.

Source: CANCER RESEARCH Volume: 58 Issue: 9 Pages: 1920-1929 Published: MAY 1 1998

36. Title: Anticarcinogenic effect of a flavonoid antioxidant, silymarin, in human breast cancer cells MDA-MB 468: Induction of G(1) arrest through an increase in Cip1/p21 concomitant with a decrease in kinase activity of cyclin-dependent kinases and associated cyclins

Author(s): Zi, XL; Feyes, DK; Agarwal, R

Source: CLINICAL CANCER RESEARCH Volume: 4 Issue: 4 Pages: 1055-1064 Published: APR 1998

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.

Source: CHEMICAL & PHARMACEUTICAL BULLETIN Volume: 52 Issue: 5 Pages: 507-509 DOI: 10.1248/cpb.52.507 Published: MAY 2004

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

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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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KeyWords Plus: RAMOSUS TUBERS

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Source: ACTA PHARM JUGOSL Volume: 41 Pages: 147 Published: 1991

2. Title: Chemistry of Asphodelus fistulosus

Author(s): Abd El-Fattah, Hosny

Source: International Journal of Pharmacognosy Volume: 35 Issue: 4 Pages: 274-277 Published: Oct., 1997

3. Title: FREE ANTHRAQUINONES OF ASPHODELUS-ALBUS VAR DELPHINENSIS AND ASPHODELUS-CERASIFER (View record in MEDLINE)

Author(s): ABDELGAWAD, M; RAYNAUD, J; NETIEN, G

Source: PLANTA MEDICA Volume: 30 Issue: 3 Pages: 232-236 Published: 1976

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Author(s): Abdel-Mogib, M

Source: PHYTOCHEMISTRY Volume: 51 Issue: 3 Pages: 445-448 DOI: 10.1016/S0031-9422(98)00771-7 Published: JUN 1999

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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

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

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Author(s): CABO J

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Author(s): COSMO, R; HAMBLEY, TW; STERNHELL, S

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Author(s): KRIVOSHCHEKOVA, OE; MAXIMOV, OB; STEPANENKO, LS; et al.

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Author(s): MAJUMDER, PL; CHATTOPADHYAY, A

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Author(s): RIZK, AM; ABDELGAW.MM; HAMMOUDA, FM

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