Angélica - Angelica sinensis

Sinonímia Popular: Imperatriz das ervas, Dong quai, Angélica chinesa.

Composição química:

- fucose, galactose, glucose, arabinose, rhamnose e xylose (9)

Partes Usadas:

- raiz.

Uso Popular:

- menopausa;
- tensão pré menstrual;
- auxilia na retomada da menstruação após suspensão de anticoncepcionais;
- desordens menstruais;
- anemia;
- artrites;
- enxaqueca;
- dores abdominais;
- dilata a coronária;
- miorrelaxante;
- tranqüilizante;
- previne alergias;
- anti-tumoral;
- imuno-estimulante.

Uso Cientificamente Comprovados ou em Estudos:

- Efeito angiogênico (1)
- Efeito hepatoprotetor (2, 16)
- Efeito protetor intestinal na colite ulcerativa e nas agressões químicas do colon (3, 4)
- Auxiliar no tratamento da fibrose renal (4) e das lesões renais pós isquemia-reperfusão (14)
- Tratamento dos sintomas da menopausa (6, 8, 10)
- Auxiliar na recuperação endotelial pós infarto do miocárdio (7)
- Prevenção do câncer (11)
- Melhora imunológica (12, 13)

Biblioteca:

1. [Comparative study on angiogenesis effect of Astragalus membranaceus and Angelica sinensis in chick embryo choriollantoic membrane]
[Article in Chinese]
Lei Y, Wang JH, Chen KJ.
Department of Cardiovascular Diseases, Xiyuan Hospital, China Academy of Traditional Chinese Medicine, Beijing 100091, China.

OBJECTIVE: To explore the angiogenesis effect of Astragalus membranaceus
and Angelica sinensis with different ratio in chick embryo chorioallantoic membrane (CAM). METHOD: Chicken CAM model was adopted. The rat blood serum containing different ratio of Astragalus membranaceus and Angelica sinensis was put daily into 3-day chick embryo. CAMs and CAM angiogenesis were observed at 72 h after incubation. RESULT: Better effects were obtained in the formation of capillary and the count of blood vessel in groups treated by Astragalus membranaceus and Angelica sinensis in the ratio of five to one, compared with the NS control group and the other ratio groups of Astragalus membranaceus and Angelica sinensis. CONCLUSION: Astragalus membranaceus and Angelica sinensis in 5:1 ratio have certain promotive effect on the formation of capillary. The Danggui Buxue Decoction has the best ratio.

2. [Effects of Angelica sinensis polysaccharides on hepatic drug metabolism enzymes activities in mice]
[Article in Chinese]
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OBJECTIVE: To study the effects of Angelica sinensis Polysaccharides (ASP) on the hepatic drug metabolism enzymes activities in normal mice and those prednisolone (PSL)-induced liver injury. METHOD: The activities of phase II enzymes (GSH-related enzymes) and cytochrome P450 enzymes were measured by biochemical method. RESULT: ASP increased the activities of glutathione S-transferase in liver microsomes and mitochondria. The cytochrome P450 content, NADPH-cytochrome c reductase, aminopyrine N-demethylase, and aniline hydroxylase activities in liver microsomes were also increased. PSL significantly increased serum ALT levels, and decreased the liver mitochondrial glutathione content. At the same time, other enzymes activities were all increased. When mice were treated with ASP 2.0 g.kg-1, the PSL-induced changes on cytochrome P450 enzymes, glutathione S-transferase, and GSH content were restored. CONCLUSION: ASP can modulate the activities of drug metabolism enzymes.

3. Abnormal function of platelets and role of angelica sinensis in patients with ulcerative colitis.
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AIM: To explore the abnormal function of platelets and the role of angelica sinensis injection (ASI) in patients with ulcerative colitis (UC). METHODS: In 39 patients with active UC, 25 patients with remissive UC and 30 healthy people, alpha-granule membrane protein (GMP-140) and thromboxane B(2) (TXB(2)) were detected by means of ELISA, 6-keto-PGF(1a) was detected by radioimmunoassay, platelet count (PC) and 1 min platelet aggregation rate (1 min PAR) were detected by blood automatic tester and platelet aggregation tester respectively, and von Willebrand factor related antigen (vWF:Ag) was detected by the means of monoclonal -ELISA. The 64 patients with UC were divided into two therapy groups. After routine treatment and angelica sinensis injection (ASI) + routine treatment respectively for 3 weeks, all these parameters were also detected. RESULTS: The PC, 1 min PAR and levels of GMP-140, TXB(2), and vWF:Ag in active UC were significantly higher than those in remissive UC and normal controls (P<0.05-0.01).Meanwhile, 1 min PAR and levels of GMP-140, TXB(2), and vWF:Ag in remissive UC were still significantly higher than those in normal controls (P<0.05). Furthermore, 6-keto-PGF(1a) level in active and remissive UC was remarkably lower than that in normal control (P<0.05-0.01). These parameters except 6-keto-PGF(1a) were significantly improved after the treatment in ASI therapy group (P<0.05-0.01), whereas they all were little changed in routine therapy group (P>0.05).
CONCLUSION: Platelets can be significantly activated in UC, which might be
related with vascular endothelium injury and imbalance between TXB(2) and 6-keto-PGF(1α) in blood. ASI can significantly inhibit platelet activation, relieve vascular endothelial cell injury, and improve microcirculation in UC.

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Nephrotic syndrome has long been treated in China with two herbs, Astragalus mongholicus and Angelica sinensis, which may have antifibrotic effects.

METHODS: Rats with chronic puromycin-induced nephrosis were treated with Astragalus and Angelica 3 mL/d (n = 7) or enalapril 10 mg/kg/d (n = 7). Normal control rats (n = 7) received saline rather than puromycin, and an untreated control group (n = 7) received puromycin but no treatment. After 12 weeks, stained sections of the glomerulus and tubulointerstitium were evaluated for injury. Immunohistochemistry staining measured extracellular matrix components, transforming growth factor-beta1 (TGFbeta1), osteopontin, ED-1-positive cells, and alpha-actin. TGFα1 mRNA was assessed by in situ hybridization. Renin, ACE activity, angiotensin, and aldosterone were measured by radioimmunoassay or colorimetry. In the untreated rats, chronic renal injury progressed to marked fibrosis at 12 weeks. Astragalus and Angelica significantly reduced deterioration of renal function and histologic damage. Expressions of type III and IV collagen, fibronectin, and laminin also decreased significantly. This anti-fibrotic effect was similar to that of enalapril. The herbs had no effect on the renin-angiotensin system but did reduce the number of ED-1-positive, and alpha-actin positive cells and expression of osteopontin compared to untreated controls. The combination of Astragalus and Angelica retarded the progression of renal fibrosis and deterioration of renal function with comparable effects of enalapril. These effects were not caused by blocking the intrarenal renin-angiotensin system, but associated with suppression of the overexpression of TGFbeta1 and osteopontin, reduction of infiltrating macrophages, and less activation of renal intrinsic cells.

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AIM: To study the effect of angelica sinensis polysaccharide (ASP) on immunological colon injury and its mechanisms in rats. METHODS: Immunological colitis model of rats was induced by intracolon enema with 2, 4,6-trinitrobenzene sulfonic acid (TNBS) and ethanol. The experimental animals were randomly divided into normal control, model control, 5-aminosalicylic acid therapy groups and three doses of ASP therapy groups. The 6 groups were treated intracolonically with normal saline, normal saline, 5-aminosalicylic acid (100 mg.kg(-1)), and ASP daily (8:00 am) at the doses of 200, 400 and 800 mg.kg(-1) respectively for 21 days 7 d following induction of colitis. The rat colon mucosa damage index (CMDI), the histopathological score (HS), the score of occult blood test (OBT), and the colonic MPO activity were evaluated. The levels of SOD, MDA, NO, TNF-alpha, IL-2 and IL-10 in colonic tissues were detected biochemically and immunoradiometrically. The expressions of TGF-beta and EGF in colonic tissues were also determined immunochemically. RESULTS: Enhanced colonic mucosal injury, inflammatory response and oxidative stress were observed in colitis rats, which manifested as significant increases of CMDI, HS, OBT, MPO activity, MDA and NO contents, as well as the levels of TNF-alpha and IL-2 in colonic tissues, although colonic TGF-beta protein expression, SOD activity and IL-10 content were significantly decreased.
compared with the normal control ($P<0.01$). However, these parameters were found to be significantly ameliorated in colitis rats treated intracolonically with ASP at the doses of 400 and 800 mg.kg$^{-1}$ ($P<0.05-0.01$). Meantime, colonic EGF protein expression in colitis rats was remarkably up-regulated.

CONCLUSION: ASP has a protective effect on immunological colon injury induced by TNBS and ethanol enema in rats, which was probably due to the mechanism of antioxidation, immunomodulation and promotion of wound repair.

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OBJECTIVE: To assess the efficiency of a medicinal herb extract preparation (Climex) for the treatment of menopausal symptoms. METHOD: In this placebo-controlled experiment on 55 postmenopausal women who complained of hot flushes and refused hormonal therapy. The women were randomly divided into two groups, one to receive Climex (5 chewable tablets daily between meals) and the other group to receive a placebo; both groups would take the tablets for 12 weeks. The women were asked to complete a daily structured (Kupperman) questionnaire assessing the frequency and intensity of menopausal symptoms, starting one week prior to treatment to the completion of the study. All women underwent hormone profile measurements and transvaginal ultrasonography evaluation before and after treatment. RESULTS: There was a significant difference between the study group and the control group in the decrease in number and intensity of hot flushes from baseline to completion of treatment (90-96% vs 15-25%, $P < 0.001$). In the study group, a response was already noted during the first month of treatment (68% +/- 2% reduction of hot flushes during the day and 74% +/- 4% during the night). There was also a marked alleviation of sleep disturbances and fatigue.

CONCLUSIONS: Treatment with Climex seems to be effective for menopausal symptoms without apparent major adverse effects. This hormone-free preparation may be used as an important modality for menopausal women with contraindications for hormone replacement therapy.

7. [Study on effects of astragalus, angelica and their combination on vascular endothelial cell proliferation in vitro]
[Article in Chinese]
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OBJECTIVE: To study the effects of Astragalus membranaceus (AM), Angelica sinensis (AS) and their combination on human umbilical vein endothelial cell (HUVEC) proliferation and cells cycle. METHODS: The effects were observed and studied by means of taking the cultured HUVECs as model to determine the cell proliferation with MTT method, cell cycle was analyzed with cytometry, and vascular endothelial growth factor (VEGF) expression with SABC method. The regulatory effects of AM, AS and their combination on the HUVEC proliferation promoting were observed and studied. RESULTS: AM and AS, used singly or in combination, could promote the growth of endothelial cells, increase the cell population in S phase, the effects showed more significant when used in combination ($P < 0.05$ or $P < 0.001$). Meanwhile, VEGF expression in all the medicated group was up-regulated, but in the PBS control group, it showed only weak expression ($P < 0.05$ or $P < 0.01$). CONCLUSION: AM and AS have effect in promoting vascular endothelial cell proliferation and DNA synthesis, and showed synergistic effect when they were used in combination, suggesting that these two Chinese herbs could have certain effect on the genesis and development of neogenetic vascularization in ischemic
8. Nutritional approaches to late toxicities of adjuvant chemotherapy in breast cancer survivors.

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Adjuvant chemotherapy of breast cancer reduces recurrence rates and prolongs survival at the cost of both acute and chronic toxicities. Breast cancer survivors who have received adjuvant chemotherapy may suffer from late effects of chemotherapy including congestive heart failure, neuropathy, premature menopause, and osteoporosis. Nutritional approaches to these problems are distinct in their orientation and success. Study of free radical scavengers for anthracycline-induced cardiomyopathy was born from known pathogenetic mechanisms of cardiotoxicity but has been universally disappointing thus far in clinical trials. Application of agents used for diabetic neuropathy suggests that evening primrose oil, alpha-lipoic acid, and capsaicin may all play a role in the empiric options available to patients with chemotherapy-induced neuropathy. Plant-derived preparations including black cohosh (Actaea racemosa), dong quai (Angelica sinensis), evening primrose (Oenothera biennis), and red clover (Trifolium pretense) are used by patients experiencing hot flashes due to premature menopause despite a paucity of clinical trial data demonstrating either safety or efficacy. Calcium and vitamin D are widely accepted as an effective means to retard bone loss leading to osteoporosis. Nutritional approaches to late effects of breast cancer chemotherapy offer the prospect of preventing or ameliorating these sequelae of treatment. However, except for vitamin D and calcium for prevention of bone loss, current clinical evidence supporting use of nutritional agents remains sparse.

9. Determination of the compositions of polysaccharides from Chinese herbs by capillary zone electrophoresis with amperometric detection.

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In this paper, capillary zone electrophoresis with amperometric detection (CZE-AD) was applied to determine the compositions of heteropolysaccharides from Chinese herbs, Angelica sinensis and flax by analyzing their hydrolyzed monosaccharides: fucose, galactose, glucose, arabinose, rhamnose and xylose. Under the selected optimum conditions, the six monosaccharides could be perfectly separated within 25 min and showed significant current responses at copper electrodes. The linear ranges of the six monosaccharides were all from 5.0 x 10(-6) to 2.0 x 10(-4) mol L(-1) and their detection limits were lower or near 1.0 x 10(-6) mol L(-1) (S/N = 3).

Experiments showed that the Angelica sinensis polysaccharide was composed of fucose, galactose, glucose, arabinose, rhamnose and xylose (mole ratio 1.0:13.6:15.0:8.7:21.3:3.7), and the flax polysaccharide was composed of galactose, glucose and arabinose (mole ratio 1.0:4.98:1.1). The purity of these polysaccharides leached by the introduced leaching method was 98.3 and 97.6%, respectively. Analyzing polysaccharides by this method has some merits of speed, simple instrumentation and operation, high sensitivity and high reproducibility. Copyright 2003 John Wiley & Sons, Ltd

10. A systematic review of herbal medicinal products for the treatment of menopausal symptoms.

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OBJECTIVE: Many women have turned to complementary and alternative medicines for relief from their menopausal symptoms. The prevalence of herbal medicinal product use among menopausal women highlights the need for investigation into these interventions. The aim of this study was to evaluate the benefit of herbal medicinal products for the treatment of menopausal symptoms by performing a systematic review of randomized clinical trials. DESIGN: Literature searches of four computerized databases were done to identify randomized clinical trials of herbal medicinal products for the treatment of menopausal symptoms. Manufacturers of herbal products were contacted, and our own files were also searched. There were no restrictions on the language of publication. Trials were considered if the outcome measures related to the physical or psychological impact of menopause, whether by compendium scores, questionnaires, or women's symptom diaries, excluding studies describing artificially induced menopause. This review was not concerned with biochemical or pathological data. RESULTS: Eighteen randomized clinical trials that fit our criteria were identified. These studies investigated black cohosh (n = 4), red clover (n = 4), kava (n = 3), dong quai (n = 1), evening primrose oil (n = 1), ginseng (n = 1), and combination products (n = 4). Trial quality was generally good, with 16 of 18 studies scoring 3 or more (maximum 5) on the Jadad Scale. CONCLUSIONS: There is no convincing evidence for any herbal medical product in the treatment of menopausal symptoms. However, the evidence for black cohosh is promising, albeit limited by the poor methodology of the trials. The studies involving red clover suggest it may be of benefit for more severe menopausal symptoms. There is some evidence for the use of kava, but safety concerns mean this herbal product is not a therapeutic option at present. The evidence is inconclusive for the other herbal medicinal products reviewed.

11. Experimental study of anti-tumor effects of polysaccharides from Angelica sinensis.
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AIM: To investigate the in vivo anti-tumor effects of total polysaccharide (AP-0) isolated from Angelica sinensis (Oliv.) Diels (Danggui) on mice and the in vitro inhibitory effects of AP-0 and the sub-constituents (AP-1, AP-2 and AP-3) separated from AP-0 on invasion and metastasis of human hepatocellular carcinoma. METHODS: Three kinds of murine tumor models in vivo, sarcoma 180 (S180), leukemia L1210 and Ehrlich ascitic cancer (EAC) were employed to investigate the anti-tumor effects of AP-0. For each kind of tumor model, three experimental groups were respectively given AP-0 at doses of 30, 100 and 300 mg/kg by ip once a day for 10 days. Positive control groups were respectively given Cy at a dose of 30 mg/kg for S180 and leukemia L1210, and 5-FU at a dose of 20 mg/kg for EAC. On d 11, mice bearing S180 were sacrificed and the masses of tumors, spleens and thymus weighed. The average living days of mice bearing EAC and of mice bearing L1210 were observed, and the rates of life prolongation of each treatment were calculated, respectively. The inhibitory effects of APs on hepatoma invasion and metastasis in vitro were investigated by employing human hepatocellular carcinoma cell line (HHCC) with the Matrigel invasion chamber, adhesion to extracellular matrix and chemotatic migration tests, respectively. RESULTS: AP-0 had no obviously inhibitory effect on the growth of S180, but it could significantly decrease the thymus weights of the mice bearing S180. AP-0 could significantly reduce the production of ascitic liquids and prolong the life of mice bearing EAC. AP-0 could also increase the survival time of mice bearing L1210. AP-0 and AP-2 had significantly inhibitory effects on the invasion of HHCC into the Matrigel reconstituted basement membrane with the inhibitory rates of 56.4 % and 68.3 %, respectively. AP-0, AP-1, AP-2 and AP-3 could influence the adhesion of HHCC to extracellular matrix proteins (Matrigel and fibronectin) at different degrees, among them only AP-3 had significant blocking effect on the adhesion
of HHCC to fibronectin with an inhibitory rate of 30.3%. AP-0, AP-1 and AP-3 could partially inhibit the chemotactic migration abilities of HHCC.

CONCLUSION: The experimental findings suggest that the total polysaccharide of Angelica sinensis (Oliv.) Diels (Chinese Danggui) possesses anti-tumor effects on experimental tumor models in vivo and inhibitory effects on invasion and metastasis of hepatocellular carcinoma cells in vitro.

12. [Effect of Angelica sinensis polysaccharides on lymphocyte proliferation and induction of IFN-gamma]
[Article in Chinese]
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AIM: To study the effect of Angelica sinensis polysaccharides on lymphocyte proliferation and induction of IFN-gamma. METHODS: Angelica sinensis polysaccharides (AP) were separated into AP-I, AP-II, AP-III and AP-IV by alcohol deposition with different concentration. The radioactivities of [3H]-TdR uptake by lymphocyte were used to determine the ability of lymphocyte. The bioactivity of IFN-gamma was measured by violet crystalline dying. RESULTS: AP-IV was found to be composed of Ara and Glu in the ratio of 0.99:6.47, the molecular weight was estimated to be 5,600. AP-I and AP-II 100 mg.kg-1 i.p. were found to significantly augment mice splenocyte proliferation, release IFN-gamma and increase IFN-gamma bioactivity. 50 micrograms.mL-1 AP-I, AP-II and AP-III were shown to enhance the proliferative response of the mouse spleen lymphocytes in vitro. CONCLUSION: AP-I and AP-II showed higher immunoactivity than AP-III, AP-IV had no effect.

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OBJECTIVE: To study the effect of two kinds of Chinese herbal medicine, Radix angelicae sinensis (RAS) ([Chinese characters: see text]) and Shuanghuanglian (SHL) ([Chinese characters: see text]) on chronic Pseudomonas aeruginosa (PA) lung infection in a rat model mimicking cystic fibrosis (CF). METHODS: Rats were divided into RAS, SHL and control groups. All rats were challenged intratracheally with alginate embedded PA and the treatments with herbal medicine started on the same day of challenge. The drugs were administered subcutaneously once a day for ten days and the control group was treated with sterile saline. The rats were sacrificed two weeks after challenge. RESULTS: Significantly improved lung bacterial clearance (P < 0.05, P < 0.01) and milder macroscopic lung pathology (P < 0.005) were found in the two treated groups compared to the control group. In the SH treated group, the neutrophil percent in the peripheral blood leukocytes (P < 0.05), the anti-PA IgG level in serum (P < 0.05), the incidence of lung abscesses (P < 0.005) and the incidence of acute lung inflammation (P < 0.05) were significantly lower than in the control group. The RAS treatment reduced fever (P < 0.05), decreased the incidence of lung abscesses (P < 0.005) and lung mast cell number (P < 0.05), and lowered anti-PA IgG1 level in serum (P < 0.05) when compared to the control group. The anti-PA bacterial activity test in SHL was weakly positive whereas in RAS it was negative. CONCLUSION: The treatment with both herbal medicines could increase the resistance of the rats against PA lung infection and they therefore might be potential promising drugs for stimulation of the immune system in CF patients with chronic PA lung infection.

14. [Adjustment effect of Radix Astragalus and Radix Angelicae sinensis on TNF-alpha and bFGF on renal injury induced by ischemia reperfusion in rabbit]

15. [Article in Chinese]
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OBJECTIVE: To study the mechanism of Astragalus membeanaceus and Angelica sinensis in renal ischemia reperfusion injury of rabbits. METHOD: Thirty-four healthy mature Japanese big-ear rabbits were randomized into control group, IR model group, Astragalus Membeanaceus + IR group and Danggui + IR group. Renal ischemia lasted for 1 hour and then the renal reperfusion lasted for 48 hours. At the end, kidneys were observed with Electron Microscopy and the level of Cr in serum and the level of TNF-alpha and bFGF in kidneys were measured. RESULT: The changes of kidneys in IR model group were significant, but they were slight in Astragalus Membeanaceus + IR group and Danggui + IR group. The level of Cr in serum and the level of TNF-alpha in kidneys of IR model group were higher and yet the level of bFGF decreased obviously. The level of Cr and TNF-alpha in Astragalus Membeanaceus + IR group and Danggui + IR group was lower than that in IR model group and the level of bFGF was higher than that in IR model group. CONCLUSION: The mechanism of Astragalus Membeanaceus and Danggui in remedying renal IR injury may be relative to their regulation of TNF-alpha, bFGF and other cytokines.

16. Modulation of GdCl3 and Angelica sinensis polysaccharides on differentially expressed genes in liver of hepatic immunological injury mice by cDNA microarray.
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AIM: To study the modulating effect of GdCl(3) and Angelica Sinensis polysaccharides (ASP) on differentially expressed genes in liver of hepatic immunological mice by cDNA microarray. METHODS: Hepatic immunological injury was induced by lipopolysaccharide (LPS ip, 0.2 mg/kg(-1)) in bacillus calmetteguerin (BCG ip, 1 mg/kg(-1)) primed mice; A single dose of 20 mg/kg(-1) GdCl(3) was simultaneously pretreated and 30 mg/kg(-1) ASP (ig, qdx7 d) was administrated when the BCG+LPS was primed. The mice were sacrificed at the end of the 7(th) day after ip LPS for 6 h and the liver was removed quickly. The PCR products of 512 genes were spotted onto a chemical material-coated glass plate in array. The DNAs were fixed to the glass plate after series of treatments. The total RNAs were isolated from the liver tissue, and were purified to mRNAs by Oligotex. Both mRNAs from the normal liver tissue and the liver tissue from the mice with hepatic immunological injury or that pretreated with GdCl(3) or ASP were reversely transcribed to cDNAs with the incorporation of fluorescent dUTP to prepare the hybridization probes. The mixed probes were hybridized to the cDNA microarray. After high-stringent washing, the cDNA microarray was scanned for fluorescent signals and showed differences between the two tissues. RESULTS: Among the 512 target genes, 18 differed in liver tissue of hepatic immunological injury mice, and 6 differed in those pretreated with ASP, 7 differed in those pretreated by GdCl(3). CONCLUSION: cDNA microarray technique is effective in screening the differentially expressed genes between two different kinds of tissue. Further analysis of those obtained genes will be helpful to understand the molecular mechanism of hepatic immunological injury and to study the intervention of drug. Both ASP and GdCl(3) can decrease the number of the differentially expressed genes in liver tissue of mice with hepatic immunological injury.

PMID: 12717859 [PubMed - indexed for MEDLINE]
Effect of Angelica sinensis (Oliv.) on melanocytic proliferation, melanin synthesis and tyrosinase activity in vitro.

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OBJECTIVE: To investigate the effects of Angelica sinensis (Oliv.) on melanocytes and tyrosinase activity. METHODS: MTT method and cleavage by NaOH were employed to measure the proliferation and melanin synthesis of melanocytes, respectively. Tyrosinase activity assessment was performed by measuring the rate of oxidation of DL-dopa. RESULTS: Angelica sinensis (Oliv.) was found to promote melanocytic proliferation (P < 0.05), resulting in a statistically significant increase in the cell counts (P < 0.05). It also enhanced melanin synthesis (P < 0.05) and tryosinase activity (P < 0.05) of the melanocytes, and the most potent effects were achieved at the concentration of 1 g/L (P < 0.05). CONCLUSION: Angelica sinensis (Oliv.) promotes melanocytic proliferation, melanin synthesis and tyrosinase activity, which may be the mechanism for validating its clinical use in the treatment of skin pigmentation.

PMID: 12651240 [PubMed - indexed for MEDLINE]


[Protective effect of Angelica on ECV(304) from injury induced by hyperlipidemic serum in vitro]


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The aim of this article was to examine the protective effect of Chinese traditional medicine Angelica on human umbilical vein endothelial cells (HUCECs, ECV(304)) from injury induced by hyperlipidemic serum (HLS) and to study the underlying mechanisms. Microstructures of HUCECs were observed by a scanning electron microscope. Spectrophotometer and immunocytochemical methods were used to detect the content of NO in the suspension and expression of ICAM-1, TGFbeta(1), bFGF on the cell surface, respectively. After being incubated with HLS for 24 hours, HUCECs exhibited pronounced morphological changes, such as disappearance of microvilli on the endothelial cell (EC) surface, rupture of cell membranes, etc. Expression of ICAM-1 and bFGF in ECs was significantly increased, while expression of TGFbeta(1) and the release of NO from ECs were significantly decreased. All these effects of HLS on ECs can be reversed by Angelica significantly. The above effects of Angelica may be related to its anti-atherosclerotic action.

PMID: 12589412 [PubMed - indexed for MEDLINE]


[Experimental study on effect of Angelica polysaccharide in inhibitory proliferation and inducing differentiation of K562 cells]

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OBJECTIVE: To investigate the application value of Angelica polysaccharide (APS) on proliferation and differentiation of human erythroleukemia K562 cells. METHODS: The effect of APS in inhibitory proliferation and inducing differentiation of human erythroleukemia K562 cells was studied by modern experimental hematologic techniques such as cell counting and culture, flowcytometry, morphology, cytochemistry and cell differential immune phenotyping. RESULTS: APS could significantly inhibit the proliferation of K562 cells in vitro and prevent the cell from entering the active proliferative phase (P < 0.05). After being induced by APS, the differentiation of K562 cells to erythrocyte series and granulo-monocyte series increased, positive rate of benzidine, glycogen and peroxidase stain elevated, and cell surface differential antigen CD15 expression promoted significantly (P < 0.05), while C-MYC expression of K562 cells induced by APS induction lowered significantly (P < 0.05). CONCLUSION: APS could not only inhibit the proliferation of K562 cells in vitro, but also induce the differentiation of K562 cells toward erythrocyte and granulocyte series. It may be a natural inducer with promising prospect of development and application.

PMID: 12585175 [PubMed - indexed for MEDLINE]


[The intervention effects of Angelica sinensis, Salvia miltiorrhiza and ligustrazine on peritoneal macrophages during peritoneal dialysis]

[Article in Chinese]

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OBJECTIVE: To study the effect of Angelica sinensis, Salvia miltiorrhiza and Ligustazine on function of peritoneal macrophages during peritoneal dialysis. METHODS: Peritoneal macrophages of mice were cultured in culture medium (control), peritoneal dialysate (PD), drugs contained PD containing Angelica, Salvia and Ligustazine combined (PD-ASL) or separated (PD-A, PD-S, PD-L) with concentration of 2 micrograms/ml, 10 micrograms/ml and 100 micrograms/ml, separately for 24 hrs. The nitric oxide (NO) content, methyl thiazolyl tetrazolium (MTT) reducing capacity (MTT-RC) and phagocytosis capacity of macrophages were determined and compared. RESULTS: NO content and MTT-RC of macrophages cultured in PD group were significantly lower than those of the control (P < 0.01), as compared with those in drug contained PD groups, the NO content in the PD-L group and the MTT-RC in the PD-ASL group were higher significantly (P < 0.01). The phagocytosis capacity and NO content in the PD-ASL group were raised along with the increased concentration of drug in PD. CONCLUSION: Administering Chinese herbal medicine during peritoneal dialysis has important significance in improving the defense function of peritoneal macrophages, reducing the incidence of peritonitis and enhancing the therapeutic effect of peritoneal dialysis.

PMID: 12585104 [PubMed - indexed for MEDLINE]


[Effects of Angelica polysaccharide on blood coagulation and platelet aggregation]

[Article in Chinese]
Yang T, Jia M, Mei Q, Shang P.

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OBJECTIVE: To investigate the effects of angelica polysaccharide (AP) on blood coagulation and platelet aggregation. METHODS: Infrared turbidimetric method was used to estimate platelet aggregation, active partial thromboplastin time (APTT), prothrombin time (PT) and thrombin time (TT); bleeding time (BT) was measured by cutting the mouse's tail and coagulate time (CT) was measured by dropping the blood on carry sheet glass. RESULTS: AP prominently enhanced the platelet aggregation at 5 min, while showed less effects on the maximum platelet aggregation. It also markedly prolonged CT but shortened BT. AP significantly prolonged TT and APTT in dosage of 3 mg/kg and 10 mg/kg, while showed no obvious effect on PT. CONCLUSION: These results suggest that AP has potent anticoagulant and haemostasis effects. The haemostasis effect is related to promoting platelet aggregation.

PMID: 12583194 [PubMed - indexed for MEDLINE]


[Therapeutic effect of Astragalus and Angelica on renal injury induced by ischemia/reperfusion in rats]

[Article in Chinese]

Sheng MX, Li JZ, Wang HY.

Institute of Nephrology, First Affiliated Hospital of Beijing Medical University, Beijing 100034.

OBJECTIVE: To observe the effect of Astragalus and Angelica on acute renal injury. METHODS: Using the ischemia/reperfusion model established by blocking blood flow through clamping of bilateral renal artery for 45 min, the changes of glomerular filtration rate (GFR), renal plasma flow (RPF), fractional excretion of sodium (FENa), urinary volume (UV) and mean arterial pressure (MAP) as well as the morphological change of kidney before and after ischemia/reperfusion were observed. RESULTS: Astragalus and Angelica could promote recovery of RPF and GFR after ischemia/reperfusion, prevent the oliguria or shorten the oliguria period, reduce the increment of FENa and improve the histomorphological injury of kidney. CONCLUSION: Astragalus and Angelica have certain effect in protecting kidney from acute renal injury.

PMID: 12577378 [PubMed - indexed for MEDLINE]


[The regulation effects of Angelica sinensis on the erythrocytic immune function and IL-2 in mice]

[Article in Chinese]

Lu S, Huang H, Wu S.

Guangdong Medical College, Zhanjiang 524023.

The effects of Angelica sinensis solube extract on erythrocytic C3b receptor rosette rate and immune complex rosette rate and activities of interleukine-2 (IL-2) in mice are observed in this article. Angelica sinensis can significantly enhances erythrocytic C3b receptor rosette rate and IL-2 activities. The regulating actions of Angelica sinensis on erythrocytic C3b receptor rosette rate and IL-2 activities may be the direct effects.

[Effect of danggui buxue decoction on proliferation and expression of intercellular adhesion molecule-1 in human umbilical vein endothelial cells]

[Article in Chinese]

Wu Y, Zhu B.

Department of Histology and Embryology, School of Basic Medical Sciences, WCUMS, Chengdu 610041, China.

OBJECTIVE: To investigate the effect of Danggui Buxue Decoction (DBD) on proliferation and expression of intercellular adhesion molecule-1 (ICAM-1) in human umbilical vein endothelial cells (HUVECs). METHODS: After treating HUVECs with various concentrations of DBD, we analyzed the proliferation phase of HUVECs and the expression of ICAM-1 using flow cytometry.

RESULTS: It was found that DBD could promote the proliferation of HUVECs and the expression of ICAM-1. The expression of CD54 (ICAM-1) was significantly increased in the experiment groups as compared with that in the control group (P < 0.05). In addition, cell cycle analysis revealed more synthetic period cells in the experiment groups than in control group (P < 0.05).

CONCLUSION: DBD can promote the proliferation of HUVECs and increase the expression ICAM-1.
was inhibited by the treatment of ASCE. Cell proliferation, ODC and EGFR protein expression was not affected in this process. Thus, the mechanism of how ASCE accelerates ulcer healing in addition to its effect on mucus synthesis remains to be investigated.

PMID: 12493573 [PubMed - indexed for MEDLINE]


In vitro immunomodulatory effects of herbal products.

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Department of Surgery, SUNY Upstate Medical University, Syracuse, New York 13210, USA.

Immunosuppressive drugs have been developed from natural products such as soil and fungi, which are also the sources of some commonly used herbal products. However, the effect of herbal products on immune response has not been investigated. Because these products can affect the host immune system they can induce either rejection or tolerance after a transplant procedure. To investigate the effects of ten commonly used herbal products on transplant-related immune function we performed in vitro lymphocyte proliferation tests using phytohemagglutinin, mixed lymphocyte culture (MLC) assay, and interleukin (IL)-2 and IL-10 production from MLC. Dong quai, ginseng, and milk thistle had nonspecific immunostimulatory effects on lymphocyte proliferation, whereas ginger and green tea had immunosuppressive effects. Dong quai and milk thistle increased alloresponsiveness in MLC, whereas ginger and tea decreased these responses. The immunostimulatory effects of dong quai and milk thistle were consistently seen in both cell-mediated immune response and nonspecific lymphoproliferation, whereas that of ginseng was not. The immunosuppressive effect of green tea and ginger were mediated through a decrease in IL-2 production, but the immunostimulatory effects of dong quai and milk thistle were not. We conclude that green tea, dong quai, ginseng, milk thistle, and ginger have effects on in vitro immune assays that may be relevant in transplantation in humans.

PMID: 12412711 [PubMed - indexed for MEDLINE]


Phytoestrogens: a viable option?

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Estrogen replacement therapy is one of the most commonly prescribed medicines in the United States by traditional medical professionals. Over the past decade, the market for complementary/alternative therapies for hormone replacement has dramatically increased. Women are seeking more "natural" alternatives to treat menopausal symptoms. Well-designed randomized clinical trials are often lacking, as is the information on efficacy and safety. This article will review several popular herbal therapies for menopausal symptoms including phytoestrogens, black cohosh (Cimicifuga racemosa), dong quai (Angelica sinensis), chast tree (Vitex agnus-castus), and wild Mexican yam. Their use, mechanism of action, and adverse effects are outlined.

Publication Types:
Review
Review, Tutorial
Effects of ferulic acid on the impairment of inhibitory avoidance performance in rats.

Hsieh MT, Tsai FH, Lin YC, Wang WH, Wu CR.

Institute of Chinese Pharmaceutical Sciences, China Medical College, Taichung, Taiwan, R.O.C.

Ferulic acid (50 and 100 mg/kg) reversed the step-through latency shortened by scopolamine and cycloheximide but not by p-chloroamphetamine in an inhibitory avoidance performance. Piracetam and tacrine might reverse the step-through latency shortened by the above drugs. However, ferulic acid, piracetam or tacrine alone at any used dose did not influence motor activity produced by non-shock rats. Furthermore, the cerebral blood flow of rats treated with ferulic acid, piracetam or tacrine was enhanced. From these results, we suggest that the potency of ferulic acid was better than that of piracetam, but its action mechanism was somewhat different from that of piracetam and tacrine. Thus, the attenuating effects of ferulic acid on the avoidance performance impairment were related to memory processes, and might be enhancing the cholinergic activities and cerebral blood circle.

Effect of Angelica sinensis on the proliferation of human bone cells.

Yang Q, Populo SM, Zhang J, Yang G, Kodama H.

Department of Biology, Schenley High School, 4101 Bigelow Boulevard, Pittsburgh, PA 15213, USA.

BACKGROUND: Angelica sinensis, an herbal medicine known for its effect to purify blood quality and improve circulation, frequently appears as the main ingredient in prescriptions for bone injuries. Currently, how pharmacologically it contributes to the reformation of bone is unclear. METHODS: The effect of the aqueous extract of Angelica sinensis on bone cells was investigated in vitro for the first time. The human osteoprecursor cells (OPC-1) were incubated in the medium with different concentrations of the aqueous extract of Angelica sinensis and the cell proliferation was studied. RESULTS: When the concentration of Angelica sinensis aqueous extract was <125 microg/ml, the proliferation of OPC-1 was enhanced. However, the proliferation of OPC-1 was inhibited by Angelica sinensis extract with the concentrations >250 microg/ml. Under most treatments, the cells presented very pale expression for cyclooxygenase-2 (Cox 2) protein; slightly intensified band showed at the highest Angelica sinensis concentration, 1.0 mg/ml during the course of culture. CONCLUSION: The aqueous extract of Angelica sinensis was found to directly stimulate the proliferation, alkaline phosphatase (ALP) activity, protein secretion and particularly type I collagen synthesis of OPC-1 at dose-dependent manner.

Observation on short-term effects of Angelica injection on chronic obstructive pulmonary disease patients with pulmonary hypertension]
OBJECTIVE: To study the effects of 25% Angelica sinensis injection on hemodynamics, endothelin-1 (ET-1), angiotensin-II (AT-II), endogenous digitalis-like factor (EDF), pulmonary function and arterial blood gas in the patients with chronic obstructive pulmonary disease (COPD) complicated pulmonary hypertension. METHODS: Sixty COPD patients complicated with pulmonary hypertension in remission stage were randomly divided into two groups, 30 cases in each. The Angelica group and the control group were treated with Angelica sinensis injection and 5% glucose injection (250 ml, intravenous dripping per day for 10 days) respectively. It was designed to investigate the changes of hemodynamics, ET-1, AT-II, EDF, pulmonary function and arterial blood gas. RESULTS: The levels of mean pulmonary arterial pressure (mPAP), pulmonary vascular resistance (PVR), blood ET-1, AT-II and EDF were reduced by (18 +/- 5)%, (27 +/- 8)%, (20 +/- 6)%, (36 +/- 9)%, (38 +/- 11)% respectively, and PaO2 was increased in Angelica group (P < 0.05 or P < 0.01). There were insignificant differences of the above parameters in the control group, and no changes of pulmonary function in both groups. CONCLUSION: Twenty-five Percent of Angelica injection can improve pulmonary hemodynamics through influencing the metabolism of ET-1, AT-II and EDF as well as increase PaO2 of the body.
CONCLUSIONS: ASI could reduce the CD11c expression in AM of chronic bronchitis patients by inhibiting LPS induced intracellular calcium ion elevation in AM, suggesting that ASI may inhibit non-specific inflammation of respiratory tract.

PMID: 11783242 [PubMed - indexed for MEDLINE]


Astragalus mongholicus and Angelica sinensis compound alleviates nephrotic hyperlipidemia in rats.

Li J, Yu L, Li N, Wang H.

Department of Nephrology and Research Institute of Nephrology, First Hospital, Beijing Medical University, Beijing 100034, China.

OBJECTIVE: To investigate the mechanism of lipid-lowering effect of the Astragalus mongholicus and Angelica sinensis compound (A&A) on nephrotic hyperlipidemia in rats.

METHODS: Rats with nephrotic syndrome from accelerated nephrotoxic serum nephritis were used. They were divided into two groups: A&A treatment group and nephrotic control group. Normal rats were used as a normal control group. Serum lipids, serum lipoprotein lipase (LPL) and lecithin-cholesterol acyltransferase (LCAT) were assayed biochemically and enzymatically. mRNAs of hepatic hydroxy-methyl glutaryl-CoA reductase (HMG-CoA-R) and low-density lipoprotein receptor (LDL-R) were assessed by Northern blot.

RESULTS: In nephrotic control group hyperlipidemia was found. The activities of serum LPL and LCAT were low. Hepatic HMG-CoA-R mRNA increased temporarily at the early stage while LDL-R mRNA decreased gradually. In A&A treatment group, serum total cholesterol (TC), triglyceride (TG), low-density lipoproteins (LDL) and very low-density lipoproteins (VLDL) were significantly lower than those in nephrotic control group. There was no change in the amount of hepatic HMG-CoA-R mRNA, but hepatic LDL-R mRNA and activities of serum LPL and LCAT increased significantly. CONCLUSIONS: A&A alleviates hyperlipidemia considerably in nephrotic rats. A&A improves disorders of lipid metabolism perhaps through up-regulating the expression of hepatic LDL-R gene and through increasing the activities of serum LPL and LCAT.

PMID: 11775225 [PubMed - indexed for MEDLINE]


[Modulation of angelica sinensis polysaccharides on the expression of nitric oxide synthase and Bax, Bcl-2 in liver of immunological liver-injured mice]

[Article in Chinese]

Ding H, Peng R, Yu J.

Department of Pharmacology, Medical College of Wuhan University, Wuhan 430071, China.

OBJECTIVE: To investigate the modulation of Angelica Sinensis Polysaccharides on the expression of nitric oxide synthase and Bax, Bcl-2 in the liver of immunological liver injured mice.

METHODS: Immunological liver injury was induced by lipopolysaccharide (ip, 2μg/10g) in bacillus calmette-gerin (ip, 1mg/10g, qd/1 d) primed mice. Angelica Sinensis Polysaccharides was administrated to the mice with 30mg/kg, 60mg/kg, respectively. The effects of Angelica Sinensis Polysaccharides on the expression of nitric oxide synthase, Bcl-2, and Bax gene were assessed by immunohistochemistry, and the nitric oxide (NO) production, alanine transaminase (ALT) activity, glutathione S-transferase (GST) activity in serum were determined. RESULTS: The levels
of NO, sALT, and sGST were significantly higher in immunological liver-injured mice than controls. The contents of iNOS and Bax were 17.8 times (P<0.001) and 1.31 times (P<0.05) of control values, respectively. cNOS expression was not obviously changed, and no Bcl-2 expression was found in immunological liver-injured mice. Angelica Sinensis Polysaccharides of 30mg/kg could reduce the levels of NO, sALT, and sGST by 24.6%, 40.8%, and 18.4%, respectively; the expression of iNOS and Bax decrease by 84.2% and 37.1%; and the expression of cNOS, Bcl-2 increase by 66.8% and 3.38 times, respectively. The influence of Angelica Sinensis Polysaccharides of 60mg/kg was not so obvious as that of 30mg/kg on sGST, NO, cNOS, Bax, and Bcl-2, but was more effective on sALT and iNOS. CONCLUSIONS: NO production may play a role in the LPS-induced hepatotoxicity. Angelica Sinensis Polysaccharides can alleviate the immune liver injury by modulating the expression of cNOS, iNOS, Bax, Bcl-2.

PMID: 11509139 [PubMed - indexed for MEDLINE]


Protective effect of polysaccharides-enriched fraction from Angelica sinensis on hepatic injury.


Department of Pharmacology, Faculty of Medicine, The University of Hong Kong, China.

A polysaccharides-enriched fraction from the root of Angelica sinensis, which is known for its antiulcer action on the gastrointestinal tract, was isolated and studied for its hepato-protective effect in rodents. Intra-gastric administration of Angelica sinensis polysaccharides-enriched fraction (AP) at the doses of 50 or 75 mg/kg dose-dependently prevented liver toxicity induced by acetaminophen in mice but did not affect the serum acetaminophen concentration. It normalized the rises of serum alanine transferase (ALT) and hepatic nitric oxide synthase (NOS) activities and the decrease of glutathione level in the liver. It also reduced the hepatic malondialdehyde (MDA) concentration. The protective effect was less evident in the carbon tetrachloride (CCl4)-treated animals including mice and rats. In the rat the elevated serum ALT level was unaffected though the MDA level was similarly reduced by the higher dose of AP. In these animals, CCl4 increased the hepatic glutathione level instead while the NOS activity remained unchanged. These findings suggest that the pathogenic mechanisms of both acetaminophen and CCl4 are different. AP is more effective in the protection against liver damage induced by acetaminophen, which is associated with the glutathione depletion and nitric oxide synthase activation in the liver.

PMID: 11476185 [PubMed - indexed for MEDLINE]


Evaluation of estrogenic activity of plant extracts for the potential treatment of menopausal symptoms.

Liu J, Burdette JE, Xu H, Gu C, van Breemen RB, Bhat KP, Booth N, Constantinou AI, Pezzuto JM, Fong HH, Farnsworth NR, Bolton JL.

Department of Medicinal Chemistry and Pharmacognosy, UIC/NIH Center for Botanical Dietary Supplements Research, College of Pharmacy, M/C 781, University of Illinois at Chicago, 833 South Wood Street, Chicago, Illinois 60612, USA.

Eight botanical preparations that are commonly used for the treatment of menopausal symptoms were tested for estrogenic activity. Methanol extracts of red clover (Trifolium pratense L.), chasteberry (Vitex agnus-castus L.), and
hops (Humulus lupulus L.) showed significant competitive binding to estrogen receptors alpha (ER alpha) and beta (ER beta). With cultured Ishikawa (endometrial) cells, red clover and hops exhibited estrogenic activity as indicated by induction of alkaline phosphatase (AP) activity and up-regulation of progesterone receptor (PR) mRNA. Chasteberry also stimulated PR expression, but no induction of AP activity was observed. In S30 breast cancer cells, pS2 (presenelin-2), another estrogen-inducible gene, was up-regulated in the presence of red clover, hops, and chasteberry. Interestingly, extracts of Asian ginseng (Panax ginseng C.A. Meyer) and North American ginseng (Panax quinquefolius L.) induced pS2 mRNA expression in S30 cells, but no significant ER binding affinity, AP induction, or PR expression was noted in Ishikawa cells. Dong quai [Angelica sinensis (Oliv.) Diels] and licorice (Glycyrrhiza glabra L.) showed only weak ER binding and PR and pS2 mRNA induction. Black cohosh [Cimicifuga racemosa (L.) Nutt.] showed no activity in any of the above in vitro assays. Bioassay-guided isolation utilizing ER competitive binding as a monitor and screening using ultrafiltration LC-MS revealed that genistein was the most active component of red clover. Consistent with this observation, genistein was found to be the most effective of four red clover isoflavones tested in the above in vitro assays. Therefore, estrogenic components of plant extracts can be identified using assays for estrogenic activity along with screening and identification of the active components using ultrafiltration LC-MS. These data suggest a potential use for some dietary supplements, ingested by human beings, in the treatment of menopausal symptoms.

PMID: 11368622 [PubMed - indexed for MEDLINE]


"Dong Quai" or "Angelica sinensis".

[No authors listed]

AIDS: There are two species of the herb Angelica. One species is called Dong Quai or Angelica sinensis. Dong Quai helps suppress excess antibody production, reduce food allergies, and decrease inflammatory reactions. Don Quai also suppresses the TH2 cytokine profile, which is elevated in persons with CFIDS, AIDS, and chronic candidiasis. Dosing information is included.

Publication Types:
Newspaper Article

PMID: 11366544 [PubMed - indexed for MEDLINE]


[Isolation, purification and determination of polysaccharides X-C-3-III and X-C-3-IV from Angelica sinensis (Oliv) Diels]

[Article in Chinese]


Institute of Medicinal Biotechnology, Chinese Academy of Medical Sciences, Peking Union Medical College, Beijing 100050.

Polysaccharides X-C-3-III and X-C-3-IV had been obtained from Angelica sinensis (Oliv) Diels. Their average MW were determined to be 85,000 and 65,765 by gel chromatography after the hydrolysates of X-C-3-III and X-C-3-IV, the compositions of them were identified by slanization method and capillary gas chromatography. X-C-3-III and X-C-3-IV are composed of galactose, arabinose, rhamnose, glucuronic acid and galacturonic acid. The molar ratio of those sugars were determined as 24.3:15.8:4.2:3.1:52.6 and 12.6:10.7:7.2:8.3:61.2, respectively.
A mechanistic study of proliferation induced by Angelica sinensis in a normal gastric epithelial cell line.


Department of Pharmacology, The University of Zhejiang, Hangzhou, China.

It has been reported that an extract from Angelica sinensis mainly consisting of polysaccharides (95%) prevented ethanol- or indomethacin-induced gastric mucosal damage (Cho CH et al. Planta Med 2000;66:348-51). However, it is not known whether Angelica sinensis has a direct stimulatory effect on the healing of gastric mucosal lesions. To study the hypothesis that Angelica sinensis has a direct mucosal healing effect in rats and in isolated gastric epithelial cells, we assessed the wound repair in both animals and normal cell culture (RGM-1), as well as \[^3\text{H}\] thymidine incorporation, ornithine decarboxylase (ODC) activity, and ODC protein and c-Myc protein expression after different treatments in RGM-1 cells. We found that Angelica sinensis crude extract (ASCE) dose-dependently enhanced gastric ulcer healing in rats and promoted wound repair in RGM-1 cells. It also significantly stimulated \[^3\text{H}\] thymidine incorporation and ODC activity in RGM-1 cells in a concentration-dependent manner. ODC and c-Myc protein expression was also increased as a result of this process. DL-alpha-difluoromethyl-ornithine repressed the \[^3\text{H}\] thymidine incorporation and ODC activity induced by ASCE. Pretreatment with c-Myc antisense oligodeoxynucleotides blocked the stimulatory action of ASCE on \[^3\text{H}\] thymidine incorporation and ODC protein expression. These data suggest that ASCE has a direct mucosal healing effect on gastric epithelial cells, while ODC and c-Myc are closely associated with this effect.

Angelica sinensis modulates migration and proliferation of gastric epithelial cells.

Ye YN, Koo MW, Li Y, Matsui H, Cho CH.

Department of Pharmacology, Zhejiang University, Hanzhou, China.

A crude extract from Angelica sinensis (ASCE), which mainly consists of polysaccharides, prevents ethanol- or indomethacin-induced gastric mucosal damage and promotes ulcer healing. The aim of this study was to test the hypothesis that ASCE has a direct stimulating effect on gastric epithelial cells for wound healing. We found that ASCE significantly promoted the migration of epithelial cells over an artificial wound on the surface of an RGM-1 monolayer. The extract also stimulated DNA synthesis in a dose-dependent manner and concomitantly increased EGF mRNA expression. Co-incubation of ASCE with anti-EGF antibody reduced the speed of migration and the DNA synthesis, which however were still higher than the control without ASCE. These results strongly suggest that ASCE has a direct wound healing effect on gastric mucosa, and this is acting partially through an EGF-mediated pathway.
The effects of the methanolic extract of Radix Angelica Sinensis (Umbellifera) (abbreviated as RAS extract) and n-hexane fraction of RAS extract (RAS(H) fraction) on the various drugs-induced amnesia in rats were studied by using passive avoidance task. RAS extract (1 g/kg) significantly prolonged the shortened step-through latency induced by SCOP and CXM, but not PCA. Furthermore, RAS(H) fraction (1 g/kg) also significantly prolonged the shortened step-through latency induced by SCOP and CXM but not PCA. RAS extract at any dose alone did not influence the step-through latency in the training trial produced by non-shocked rats, but it plus PCA prolonged the latency compared with PCA alone. However, RAS(H) fraction (1 g/kg) prolonged the latency in the training trial produced by non-shocked rats, but it plus any induced drugs did not differ from any induced drugs alone. These results suggest that the attenuating effects of RAS extract on the various drugs-induced amnesia were related to the memory processes. n-Hexane fraction of RAS extract might be one of the active fractions of RAS extract in the treatment of amnesia.

PMID: 10999445 [PubMed - indexed for MEDLINE]


Study of the gastrointestinal protective effects of polysaccharides from Angelica sinensis in rats.

Cho CH, Mei QB, Shang P, Lee SS, So HL, Guo X, Li Y.

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We studied the protective effects of polysaccharides isolated from the root of Angelica sinensis (Oliv.) (Danggui) on gastrointestinal damage induced by ethanol or indomethacin in rats. Oral administration of ethanol provoked a marked hemorrhagic damage in the glandular mucosa, which was accompanied with a significant increase of myeloperoxidase (MPO) activity, a marker enzyme for inflammation and neutrophil infiltration. An extract from Angelica, which mainly consisted of polysaccharides (95%) (AP), dose-dependently prevented gastric mucosal damage. This ulcer protective effect could last at least 12 h after administration. Prostaglandin E2 produced a similar anti-lesion effect. AP and prostaglandin E2 also reduced mucosal MPO activity. Indomethacin-induced gastrointestinal damage, another neutrophil-dependent lesion model in the gastrointestinal tract, was also prevented by AP pretreatment. The present findings suggest that polysaccharides from Angelica possess an anti-inflammatory action, perhaps through the inhibitory action on neutrophil infiltration in the gastrointestinal mucosa. AP could potentially be useful to prevent any neutrophil-dependent mucosal injury in the gastrointestinal tract.

PMID: 10865452 [PubMed - indexed for MEDLINE]


Myocardial protection against ischaemia-reperfusion injury by a Polygonum multiflorum extract supplemented 'Dang-Gui decoction for enriching blood', a compound formulation, ex vivo.

Yim TK, Wu WK, Pak WF, Mak DH, Liang SM, Ko KM.

Department of Biochemistry, The Hong Kong University of Science & Technology, Clear Water Bay, Hong Kong, China.
'Dang-Gui Decoction for Enriching the Blood' (BE), a traditional Chinese formulation comprising Angelica sinensis and Astragalus membranaceus, is used for stimulating red blood cell production as well as enhancing cardiovascular function. In the present study, we have demonstrated the myocardial protection afforded by BE pretreatment against ischaemia-reperfusion (IR) injury in isolated-perfused rat hearts. A more complete and potent myocardial protection against IR injury was also shown by a Polygonum multiflorum extract supplemented BE preparation (BEA). The results suggest that the more potent cardioprotective action of BEA may be related to its ability to sustain the myocardial glutathione antioxidant status under conditions of IR-induced oxidative stress, which may possibly in turn result from the synergistic interaction between the BE and Polygonum extract. Copyright 2000 John Wiley & Sons, Ltd.

PMID: 10815014 [PubMed - indexed for MEDLINE]


Erratum in:

Comment in:

Herb-drug interactions.

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Concurrent use of herbs may mimic, magnify, or oppose the effect of drugs. Plausible cases of herb-drug interactions include: bleeding when warfarin is combined with ginkgo (Ginkgo biloba), garlic (Allium sativum), dong quai (Angelica sinensis), or danshen (Salvia miltiorrhiza); mild serotonin syndrome in patients who mix St John's wort (Hypericum perforatum) with serotonin-reuptake inhibitors; decreased bioavailability of digoxin, theophylline, cyclosporin, and phenprocoumon when these drugs are combined with St John's wort; induction of mania in depressed patients who mix antidepressants and Panax ginseng; exacerbation of extrapyramidal effects with neuroleptic drugs and betel nut (Areca catechu); increased risk of hypertension when tricyclic antidepressants are combined with yohimbine (Pausinystalia yohimbe); potentiation of oral and topical corticosteroids by liquorice (Glycyrrhiza glabra); decreased blood concentrations of prednisolone when taken with the Chinese herbal product xiao chai hu tang (sho-salko-to); and decreased concentrations of phenytoin when combined with the Ayurvedic syrup shankhapushpi. Anthranoid-containing plants (including senna [Cassia senna] and cascara [Rhamnus purshiana]) and soluble fibres (including guar gum and psyllium) can decrease the absorption of drugs. Many reports of herb-drug interactions are sketchy and lack laboratory analysis of suspect preparations. Health-care practitioners should caution patients against mixing herbs and pharmaceutical drugs.

Publication Types:
Review
Review, Tutorial

PMID: 10675182 [PubMed - indexed for MEDLINE]


Determination of ferulic acid in Angelica sinensis and Chuanxiong by capillary
Ferulic acid in extracts of raw herbs was separated by capillary zone electrophoresis in the buffer solution of 10 mmol/L Na(2)B(4)O(7). The simple and rapid method was linear, ranging from 5 to 100 microg/mL, and had a good reproducibility with the RSD below 2%. The contents of ferulic acid in Angelica sinensis and Chuanxiong could be easily determined within 15 min with no pretreatment and no interference. Copyright 1999 John Wiley & Sons, Ltd.

PMID: 10425022 [PubMed - indexed for MEDLINE]


[Effects of different processed products of radix Angelica sinensis on clearing out oxygen free radicals and anti-lipid peroxidation]

Wu H, Kong L, Wu M, Xi P.

Nanjing University of Traditional Chinese Medicine.

Different processed products of Radix Angelica Sinensis could clear out superoxide radical (O2.-) generated through hypoxanthinexanthine oxidase system and hydroxyl radical (.OH) generated through Fenton action, and inhibit lipid peroxidation of supernatant hepati homogenate in mice induced by free radical generation system. There exist significant differences among the different processed products.

PMID: 9772627 [PubMed - indexed for MEDLINE]


Investigation of the effect of Angelica sinensis root extract on the proliferation of melanocytes in culture.

Raman A, Lin ZX, Sviderskaya E, Kowalska D.

Department of Pharmacy, King's College London, UK.

Aqueous extracts of Angelica sinensis root, a herb commonly used in the treatment of vitiligo in Traditional Chinese Medicine, were tested for their activity on mouse melanocyte proliferation in culture. At concentrations of 0.5-2500 micrograms/ml, these extracts were not able to stimulate melanocyte cell division. On the contrary, they exerted a general cytotoxicity to the cells at higher concentrations. Cytotoxicity was reduced by prior treatment of the extract with polyvinylpolypyrrolidone, which was shown by thin layer chromatography to reduce the coumarin content.

PMID: 8953431 [PubMed - indexed for MEDLINE]


[The effect of angelica polysaccharide on proliferation and differentiation of hematopoietic progenitor cell]

Wang Y, Zhu B.
Department of Histology and Embryology, Chongqing University of Medical Sciences.

OBJECTIVE: To study the effect of angelica polysaccharide (AP) on proliferation and differentiation of hematopoietic progenitor cells for clarifying the hematonic mechanism of angelica sinensis. METHODS: The techniques of culture of hematopoietic progenitor cell and hematopoietic growth factor (HGF) assay were used. RESULTS: AP could obviously promote the proliferation and differentiation of BFU-E, CFU-E, CFU-GM and CFU-MK in healthy and anemic mice. The culture media of splenocyte, macrophage, fibroblast and skeletal muscle treated with AP had much stronger stimulating effects on hematopoietic progenitor cells. CONCLUSIONS: AP may enhance hematopoiesis by stimulating directly and/or indirectly macrophages, fibroblasts, lymphocytes in hematopoietic inductive microenvironment and muscle tissue to secrete some HGF (Epo, GM-CSF, IL, and MK-CSF). This is one of the biological mechanisms for hematonic effect of angelica sinensis.

PMID: 9206201 [PubMed - indexed for MEDLINE]

[Using ligustrazini and angelica sinensis treat the bleomycin-induced pulmonary fibrosis in rats]

[Article in Chinese]

Dai L, Hou J, Cai H.
Drum Tower Hospital, Nanjing.

OBJECTIVE: To seek a kind of Chinese traditional medicine to treat the bleomycin-induced pulmonary fibrosis. METHODS: SD rats with bleomycin A(s) induced pulmonary fibrosis, were divided into 4 groups. Normal control group (10 rats), untreated model group (35 rats), ligustrazini group (10 rats), Angelica sinensis group (10 rats). Both ligustrazini and angelica sinensis were given intraperitoneally by injection daily for 28 days. Then all rats were put to death and took out the lungs for examination. Using histopathological examination and image processing computer assisted to evaluate the result of treatments. RESULTS: Ligustrazini could obviously reduced alveolitis and fibrosis and Angelica sinensis had the similar but lesser result. CONCLUSION: Ligustrazini and angelica sinensis have successful result of treatment for pulmonary fibrosis.

PMID: 9275384 [PubMed - indexed for MEDLINE]

[Protective effects of Angelica sinensis injection on myocardial ischemia/reperfusion injury in rabbits]

[Article in Chinese]

Chen SG, Li CC, Zhuang XX.
Dept. Pharmacology, Medical College of Shantou University, Guangdong.

The injection of aqueous extract of Angelica sinensis (AS), 50 mg/kg, 30 ml, were administered intravenously at a rate of 0.4 ml/min by an infusion pump 10 min before the left anterior descending coronary artery of rabbit was ligated, the LVP and +/- dp/dtmax of the rabbit heart injured by ischemia/reperfusion in vivo, were significantly higher than those in the control group (N.S. group, P < 0.05-0.01), and the level of malon-dialdehyde (MDA) and the activity of creatine phosphokinase (CPK) in the blood plasma were lower than those in the control group remarkably (P < 0.05-0.01). These results showed that AS exerted
obvious protective effects on myocardial dysfunction and myocardial injury induced by ischemia/reperfusion.

PMID: 8580698 [PubMed - indexed for MEDLINE]

[Stimulating action of Carthamus tinctorius L., Angelica sinensis (Oliv.) Diels and Leonurus sibiricus L. on the uterus]

[Article in Chinese]
Shi M, Chang L, He G.

Department of Pharmacology, Hubei College of Traditional Chinese Medicine, Wuhan.

The experimental results indicate that the decoction of Chinese drugs Carthamus tinctorius, Angelica sinensis and Leonurus sibiricus has stimulating action on the uterus of mouse in vitro. The stimulating action of Carthamus tinctorius and Leonurus sibiricus has been found related to stimulating H1-receptor and alpha-adrenergic receptor of uterus, but the action of Angelica sinensis to stimulating H1-receptor of uterus only.

PMID: 7646782 [PubMed - indexed for MEDLINE]

Danggui (Angelica sinensis) affects the pharmacodynamics but not the pharmacokinetics of warfarin in rabbits.

Lo AC, Chan K, Yeung JH, Woo KS.

Department of Pharmacology, Chinese University of Hong Kong, Shatin.

Danggui is a popular traditional Chinese medicinal (TCM) herb which is easily obtained by the public. The effects of Danggui on the pharmacokinetics and pharmacodynamics of warfarin were studied in rabbits. Single subcutaneous doses (2 mg/kg) of warfarin were administered to 6 rabbits with or without 3 days treatment with oral Danggui extracts (2 g/kg twice daily). Plasma warfarin concentrations were measured by high performance liquid chromatography (HPLC) for 72 h after each of the two warfarin doses. The prothrombin time (PT) was measured daily for 3 days both during the Danggui treatment period and after warfarin doses. Danggui treatment did not affect PT on its own, but significantly lowered PT values 3 days after co-treatment with single dose warfarin. No significant variations in the single dose pharmacokinetic parameters of warfarin were observed after Danggui treatment. A separate group of 6 rabbits were given daily subcutaneous doses of warfarin (0.6 mg/kg) to achieve steady state level, followed by 3 day treatment with oral Danggui extract (2 g/kg twice daily). The slight increase in PT was not significant and two rabbits died after day 7 of the treatment period. However, there was no significant difference in steady state concentrations of warfarin after the Danggui treatment. Results indicate that precautionary advice should be given to patients who self-medicate with Danggui or other TCM products while on chronic treatment with warfarin.

PMID: 7588995 [PubMed - indexed for MEDLINE]

[Experimental studies on the effects of danggui buxue decoction on IL-2 production of blood-deficient mice]

[Article in Chinese]
Chen YC.
Fujian Provincial Institute of Traditional Chinese Medicine and Pharmacology, Fuzhou.

Danggui Buxue Decoction has shown the effect of significantly promoting the splenic capacity of blood-deficient mice in interleukin-2 (IL-2) production ($P < 0.001$). Individual analysis of herbal formula has shown that IL-2 production can be promoted in splenic lymphocytes of blood-deficient mice given Angelica sinensis or Astragalus membranaceus ($P < 0.001$).

PMID: 7718137 [PubMed - indexed for MEDLINE]

[Clinical effect and experimental study of xijian tongshuan pill]

[Article in Chinese]

Zhao L, Zhang Y, Xu ZX.

3rd Teaching Hospital of Norman Bethune Univ. of Med. Sci, Changchun.

Xijian Tongshuan pill (XJTS), consisted of Siegesbeckia orientalis, Moschus moschiferus, Hirudo nipponica, Prunus Persicae, Carthamus tinctorius, Ligusticum wallichii, Panax notoginseng, Angelica Sinensis, Borneolum, etc, were used in treating 70 patients with cerebral thrombosis. The marked effective rate was 82.9%, total effective rate was 96.7%. In control group A, Dextranum and Venoruton were used, in control group B cyclandelate capsule were used. The marked effective rate was 61.7% and 61.1% respectively, the total effective rate was 81.7% and 83.3%. The differences were significant ($P < 0.01$). The improvement of blood rheology and CT of brain were also significant ($P < 0.01$). The experiment proved that XJTS pill could inhibit and delay the thrombosis of rabbit, inhibit the platelet aggregation. Acute and subacute toxicity tests proved that XJTS pill was safe and effective.

Publication Types:
Clinical Trial
Controlled Clinical Trial

PMID: 8044010 [PubMed - indexed for MEDLINE]

[Effects of the combination of Astragalus membranaceus (Fisch.) Bge. (AM), Angelica sinensis (Oliv.) Diels (TAS), Cyperus rotundus L. (CR), Ligusticum chuangxiong Hort (LC) and Peaonia veitchii lynch (PV) on the hemorheological changes in "blood stagnating" rats]

[Article in Chinese]

Xue JX, Yan YQ, Jiang Y.

Institute of Traditional Chinese Materia Medica, China Pharmaceutical University, Nanjing.

The "blood stagnating" rat model was built with adrenaline and cold stimulation. Its hemorrheological character was an increase in the viscosity, thickness and liability to coagulate. The experimental result showed that AM and TAS could decrease the whole blood specific viscosity, but at the same time increase the plasma specific viscosity. The qi-regulating drug CR and two blood-activating drugs LC and PV could improve the hemorrheological changes in "blood stagnating" rats. The combination of qi-regulating drugs and blood-activating drugs had more favorable effect.

PMID: 8011132 [PubMed - indexed for MEDLINE]
[Research on the mechanism of blood-tonifying effect of danggui buxue decoction]

[Article in Chinese]
Chen YC, Gao YQ.
Fujian Provincial Academy of Traditional Chinese Medicine and Materia Medica, Fuzhou.

Danggui Buxue Decoction has shown the effects of significantly promoting the splenic capacity of healthy mice in generating clone-stimulating factors (CSFs) both in spleen conditioned medium (SCM) and in lung conditioned medium (LCM), and markedly enhancing the capacity of the lungs of blood-deficient mice in generating CSFs in spleen conditioned medium. CSFs generation in SCM is promoted in the spleen of healthy mice given Angelica sinensis, but markedly inhibited if Astragulus membranacous is used. The results suggest that blood-tonifying and blood-activating effects of Danggui Buxue Decoction are associated with its CSFs secretion-stimulating action, which is brought about by Angelica sinensis.

PMID: 8011126 [PubMed - indexed for MEDLINE]

[Sodium ferulate alleviated paracetamol-induced liver toxicity in mice]

[Article in Chinese]
Wang H, Peng RX.
Department of Pharmacology, Hubei Medical University, Wuhan, China.

Sodium ferulate (SF) is one of the effective components of Angelica sinensis Diels. Pretreatment with SF (100 mg.kg-1 ig, qd x 10 d) inhibited the activity of serum alanine aminotransferase, prevented the depletion of liver glycogen and glutathione, increased the liver homogenate and microsomal glutathione S-transferase activities, and reduced the malondialdehyde content, the membrane fluidity of liver microsome and the mitochondria in paracetamol (130 mg.kg-1, ip)-induced liver toxicity in mice. These results demonstrated the hepato-protective action of SF in mice.

PMID: 8010094 [PubMed - indexed for MEDLINE]

Immunopharmacological studies of low molecular weight polysaccharide from Angelica sinensis.

Choy YM, Leung KN, Cho CS, Wong CK, Pang PK.
Department of Biochemistry, Chinese University of Hong Kong, Shatin, N.T.

A low molecular weight polysaccharide has been isolated from the rhizome of Angelica sinensis (Oliv.) Diels (Umbelliferae). It has a molecular weight of approximately 3,000 and consists of protein (4.73%) and carbohydrate (85.85%) of which 5.2% is uronic acid. It shows strong anti-tumor activity on Ehrlich Ascites tumor bearing mice. It also exhibits immunostimulating activities, both in vitro and in vivo.

PMID: 7992813 [PubMed - indexed for MEDLINE]
[Clinical and experimental studies of effects of huayu decoction on scavenging free radicals]

Zong PP, Yan TY, Gong MM.

Beijing Friendship Hospital.

Infantile pneumonia has been treated successfully with Huayu decoction (HYD) in our department for more than ten years. According to the principles of Huoxue Huayu of TCM, the composition of Huayu decoction is as follows: Angelica sinensis, Paeonia lactiflora, Ligusticum wallichii, Spatholobus suberectus, Hirudo nipponica, Tabanus bivittatus, Paeonia suffruticosa, Astragalus membranaceus. 49 cases of infantile pneumonia were treated with HYD. The activity of erythrocyte superoxide dismutases (ESOD) was measured in these patients. The results showed that the activity of ESOD reduced in the acute stage and returned to normal in convalescence. There was significant statistical difference in activity of ESOD between the patient's group. In experimental studies, the producing of free radicals was induced by inhaling ozone in mice. It was found that HYD had the effect of scavenging free radicals in these animal models. The action of anti-oxidate of HYD was also detected in vitro. The mechanism of HYD in treating infantile pneumonia might be elucidated in some respects by these clinical and experimental studies.

PMID: 8312693 [PubMed - indexed for MEDLINE]

[Effects of the combination of Astragalus membranaceus (Fisch.) Bge. (AM), tail of Angelica sinensis (Oliv.) Diels. (TAS), Cyperus rotundus L. (CR), Ligusticum chuanxiong Hort. (LC) and Paeonia veitchii Lynch (PV) on the hemorrheological changes in normal rats]

Xue JX, Jiang Y, Yan YQ.

Institute of Traditional Chinese Materia Medica, China Pharmaceutical University, Nanjing.

The results showed that AM and TAS had significant effects of enriching the blood. CR, a Qi-regulating drug, LC and PV, two blood-activating drugs, could improve all hemorrheological indexes, such as the whole blood specific viscosity, the plasma specific viscosity, erythrocyte electrophoresis, etc. The combination of Qi-regulating drug and blood-activating drug displayed more favorable effect. This experiment has provided some pharmacological evidence for the theory of "Qi Xue Xiang Guan" (correlation of vital energy with blood circulation) in traditional Chinese medicine.

PMID: 8003220 [PubMed - indexed for MEDLINE]

[Experimental study on effects of 18 kinds of Chinese herbal medicine for synthesis of thromboxane A2 and PGI2]

Wang SR, Guo ZQ, Liao JZ.

Affiliated Dongzhimen Hospital, Beijing College of TCM.
The effect of 18 kinds of Chinese herbal medicine for the synthesis of TXA2 and PGI2 was studied. The porcine lung microsoma was used as donor of enzymes such as cyclo-oxygenase, thromboxane A2 synthetase and prostacyclin synthetase, etc. It was found that Glehnia littoralis could inhibit the synthesis of TXA2 and increase the formation of PGI2. Rheum palmatum (300 mg group) and Erigeron breviscapus significantly inhibited the synthesis of TXA2, but no apparent effect on the synthesis of PGI2. When Codonopsis pilosulae, Astraigalus membracceus, Angelica sinensis, Ginsenosides and Baicalin, etc. markedly inhibited the formation of TXA2 and mildly affected the formation of PGI2. Some Chinese herbs for promoting blood circulation play an important role on the inhibition of TXA2 synthesis. Some tonic herbs could either inhibit the synthesis of TXA2 and increase the synthesis of PGI2 or inhibit the formation of PGI2. Therefore these tonic herbs had the characteristics of both strengthening the body resistance and eliminating pathogenic factors. In this aspect they are better than the control drug (Aspirin) and other herbs of promoting blood circulation.

PMID: 8339039 [PubMed - indexed for MEDLINE]

[Short-term effects of Angelica sinensis and nifedipine on chronic obstructive pulmonary disease in patients with pulmonary hypertension]

Xu JY, Li BX, Cheng SY.

Third Hospital of Huangshi, Hubei.

40 COPD cases with pulmonary hypertension (PH) in remission stage were equally divided into four groups, 10 cases in each. Group 1-4 were treated with 25% Angelica sinensis (250 ml, iv. drip, qd), nifedipine (10 mg, po, tid), both Angelica sinensis+nifedipine and blank control respectively. The study was designed to investigate the changes of hemodynamics, pulmonary function and blood gas before and after the treatments by impedance rheopneumogram, lung function examination and blood gas analysis. Results: Mean pulmonary arterial pressure was decreased and cardiac output, PaO2 were increased significantly (P < 0.05 or P < 0.01) in group 3. The effects of group 3 appeared to be better than in other groups. The side effect of PaO2 lowering in group 2 was overcome in adding Angelica sinensis.

PMID: 1304838 [PubMed - indexed for MEDLINE]

[Immunopharmacology of Angelica sinensis]

Liu ZX.

Publication Types:
Review
Review, Tutorial

PMID: 1421982 [PubMed - indexed for MEDLINE]

Antiinflammatory effect of tetramethylpyrazine and ferulic acid.

Ozaki Y.

Division of Pharmacognosy and Phytochemistry, National Institute of Hygienic
Tetramethylpyrazine (TMP) is one of the alkaloids contained in Ligusticum wallichii Franch (L. wallichii). Ferulic acid (FA) is a phenolic compound contained in L. wallichii and Angelica sinensis (Oliv.) Diels (A. sinensis). The present study was carried out to examine the antiinflammatory effect and to elucidate the mode of the effect of TMP and FA. Both compounds significantly inhibited the edema induced by carrageenin, the increase of the dye leakage induced by acetic acid and the granuloma formation induced by cotton pellet. And also, TMP and FA inhibited the number of writhes induced by acetic acid. From these results, it is suggested that both compounds have the antiinflammatory effect and the analgesic effect, and both compounds exert an antiinflammatory effect at the early and the late stages of processes in the inflammatory pathology.

PMID: 1525949 [PubMed - indexed for MEDLINE]

[Phospholipid components of danggui]

Guo R, Lu J, Xu Y.

Nanjing College of Traditional Chinese Medicine.

This paper deals with the phospholipid components in Danggui (Angelica sinensis and Levisticum officinale) by using thin-layer chromatographic scanning and the corrective method of absorbance proportional coefficient. Seven known and two unknown phospholipid components were separated and determined. The authors have compared the composition of phospholipids for six Danggui samples.

PMID: 1811671 [PubMed - indexed for MEDLINE]

Advances in the pharmacological studies of radix Angelica sinensis (Oliv) Diels (Chinese Danggui).

Mei QB, Tao JY, Cui B.

Department of Pharmacology, Fourth Military Medical University, Xi'an.

Publication Types:
Review
Review, Tutorial

PMID: 1935361 [PubMed - indexed for MEDLINE]

Inhibitory effects of tetramethylpyrazine and ferulic acid on spontaneous movement of rat uterus in situ.

Ozaki Y, Ma JP.

National Institute of Hygienic Sciences, Tokyo, Japan.

Tetramethylpyrazine is one of the alkaloids contained in Ligusticum wallichii Franch. Ferulic acid is a phenolic compound contained in Ligusticum wallichii Franch and Angelica sinensis (Oliv.) Diels. The present study was carried out to examine the effect of tetramethylpyrazine and ferulic acid and the combined effect of both compounds on spontaneous uterine contractions in rats in situ. Tetramethylpyrazine and ferulic acid showed an inhibitory effect on uterine
movement when given perorally and intravenously, respectively. The combination of both compounds, at doses individually insufficient to inhibit, synergistically inhibited uterine contraction. It was found that tetramethylpyrazine and ferulic acid inhibited uterine contractions and the inhibitory effect induced by the combination of both was due to the potentiation.

PMID: 2208371 [PubMed - indexed for MEDLINE]


Zhao L.

Institute of Basic Medical Sciences, Beijing.

Effects of "Qi-Xue" injection (Panax ginseng, Astragalus monogholicus, Angelica sinensis), verapamil (Vp, calcium antagonist) and their combination on pulmonary arterial pressure (PAP) and heart function were studied in rats exposed to chronic hypoxia. Male Wistar rats were divided into sea level (n = 9), hypoxic (n = 8), Chinese herbs (n = 15), Vp (n = 20) and herbs + Vp (n = 18) groups. All the rats, except the SL group, were placed in a hypobaric chamber simulating an altitude of 5000 m above sea level for 15 days. During this time, the aforementioned drugs were given i.p. bid every day. It was found that apparent increase of PAP and decrease of IC-R (index of contractility of right ventricle) were induced by hypoxia without significant change of CAP, HR or left ventricular function. Both "Qi-Xue" injection and Vp minimized the increase in PAP due to hypoxia, with the former being more effective than the latter. "Qi-Xue" injection also attenuated IC-R decrease and kept it in the normal range. No appreciable differences were observed between the effect of "Qi-Xue" and its combination with Vp. It is suggested that "Qi-Xue" injection might prevent the development of severe hypoxic pulmonary hypertension by improving heart function.

PMID: 2140724 [PubMed - indexed for MEDLINE]


Wang SQ, Du XR, Lu HW, Wang TL, Li H.

"Shen Yan Ling" (SYL) is a compound herbal preparation consisting of 16 ingredients: Herba Ecliptae, Radix Rheamnniae, Rhizoma Cibotii, Radix Angelica Sinensis, Rhizoma Ligustici Chuanxiong, Radix Paeoniae Rubra, Rhizoma Dioscoreae, Poria, Radix Sanguisorbae, Radix Rubiae, Herba Portulacae, Fructus Gardeniae, Herba Cirsii Japonici, Herba Cephalanoploris, etc. In animal experiments, SYL was shown to have therapeutic effect for Masugi's nephritis models. It has also been used with satisfactory results in the treatment of 314 cases of chronic glomerulonephritis of the common type with manifestations of Yin deficiency and endogenous heat.

PMID: 2779276 [PubMed - indexed for MEDLINE]

Zhongguo Yao Li Xue Bao. 1988 May;9(3):279-82. [Effects of Angelica sinensis polysaccharides on hemopoietic stem cells in irradiated mice] [Article in Chinese]

Mei QB, Tao JY, Zhang HD, Duan ZX, Chen YZ.
The effect of two Chinese traditional drugs, Dang Gui injection prepared from Angelica sinensis and C 21 Ester glucoside (GB) extracted from Cynanchus auriculatus on in vitro production of IL-2 has been studied. The IL-2 was produced by Con A stimulation of mouse spleen mononuclear cells. The IL-2 activity was assayed using Con A stimulated blast cells as the target. It was found that Dang Gui increased and GB decreased the production of IL-2. In the control experiments for immuno-modulating effect, prostaglandin E2 (PGE2) was found to suppress and indomethacin to increase IL-2 production. The stimulatory effect of Dang Gui was totally abrogated by PGE2.
Tao JY, Ruan YP, Mei QB, Liu S, Tian QL, Chen YZ, Zhang HD, Duan ZX.

PMID: 6536161 [PubMed - indexed for MEDLINE]

[Effects of Angelica sinensis on experimental myocardial infarction in dogs]
[Article in Chinese]

Wang FL.

PMID: 6237781 [PubMed - indexed for MEDLINE]

[Local injection of angelica sinensis solution for the treatment of sclerosis and atrophic lichen of the vulva]
[Article in Chinese]

Li YH.

PMID: 6556108 [PubMed - indexed for MEDLINE]

[The effect of Dang-Gui (Angelica sinensis) and its constituent ferulic acid on phagocytosis in mice (author's transl)]
[Article in Chinese]

Xu LN, Ouyang R, Yin ZZ, Zhang LY, Ji LX.

PMID: 7270167 [PubMed - indexed for MEDLINE]

[Effects of Carthamus tinctorius L. and Angelica sinensis (Oliv.) Diels on experimental myocardial ischemia]
[Article in Chinese]

Zhou YP, Liu WH, Huang NH, Zhang LY, Zeng GY.

PMID: 6459874 [PubMed - indexed for MEDLINE]

[The effect of Dang-Gui (Angelica sinensis) and its ingredient ferulic acid on rat platelet aggregation and release of 5-HT (author's transl)]
[Article in Chinese]

Yin ZZ, Zhang LY, Xu LN.

PMID: 7457152 [PubMed - indexed for MEDLINE]

Yao Xue Xue Bao. 1979;14(9):529-34.
[Chemical studies of Angelica sinensis (author's transl)]
[Article in Chinese]

Lin M, Zhu GD, Sun QM, Fang QC.

PMID: 532655 [PubMed - indexed for MEDLINE]
The use of furanocoumarins, which are photosensitizing compounds, combined with exposure to UV-A radiation is a common treatment for vitiligo, psoriasis, and a number of other skin diseases. Although furanocoumarins plus UV-A treatment is highly effective, several studies have shown that exposure to high doses increases the risk to development of cutaneous carcinoma. Several Dorstenia species are used in folk medicine, mainly against skin diseases, because of the presence of biologically active compounds. We present here analysis of the chemical composition of furanocoumarins from infusion and decoction of "Carapia" (Dorstenia species), which is used in Brazil against several diseases. We have employed high-performance liquid chromatography (HPLC) procedures for the quantitative determination of psoralen, bergapten, and isopimpinellin. The contents of furanocoumarins revealed an insignificant difference between infusion and decoction. Dorstenia tubicina and D. asaroides contained psoralen and bergapten only in the rhizomes, whereas D. vitifolia shows solely isopimpinellin in both rhizomes and aerial parts.

Ovicidal and larvicidal activity in vitro of Spigelia anthelmia Linn. extracts on Haemonchus contortus.

The rapid development of anthelmintic resistance, associated with the high cost of the available anthelmintic drugs, has limited the success of gastrointestinal nematodiasis control in sheep and goats and thus awakened interest in the study of medicinal plants as alternative sources of anthelmintics. Spigelia anthelmia extracts obtained with hexane, chloroform, ethyl acetate or methanol, were tested on Haemonchus contortus eggs and larvae via egg hatch and larval development tests. The extracts were evaluated at five concentrations: 3.1, 6.2, 12.5, 25.0 and 50.0 mg ml(-1). At 50.0 mg ml(-1), the ethyl acetate extract inhibited 100% of the egg hatching and 81.2% of the larval development. In a similar way the methanolic extract inhibited 97.4% of the egg hatching and 84.4% of larval development. These results suggest that utilization of S. anthelmia extracts may be useful in the control of sheep and goats.
gastrointestinal nematodes.

PMID: 14597278 [PubMed - indexed for MEDLINE]

Minor constituents of Spigelia anthelmia and their cardiac activities.

Hubner H, Vierling W, Brandt W, Reiter M, Achenbach H.

Department of Pharmaceutical Chemistry, University of Erlangen, Germany.
Huebner@pharmazie.uni-erlangen.de

A more detailed phytochemical analysis of extracts of the aerial parts of Spigelia anthelmia L. (Loganiaceae) yielded 20 structurally related new compounds besides spiganthine and ryanodine. Structure elucidation was achieved mainly by spectroscopic methods. The compounds were tested on their cardiac and on their insect antifeedant activities.

PMID: 11382246 [PubMed - indexed for MEDLINE]

Selective insect antifeedant and toxic action of ryanoid diterpenes.

Gonzalez-Coloma A, Gutierrez C, Hubner H, Achenbach H, Terrero D, Fraga BM.

Centro de Ciencias Medioambientales, CSIC, Serrano 115-bis, 28006 Madrid, Spain. azu@ccma.csic.es

In this work, we have studied the antifeedant and insecticidal effects of several natural ryanoid diterpenes. These compounds can be classified in two groups according to their chemical structures: ryanodol/isoryanodol-type (nonalkaloidal type) and ryanodine-type (alkaloidal type) ryanoids. The nonalkaloidal ryanoids were isolated from Persea indica (Lauraceae) while the alkaloidal ryanoids (ryanodines and spiganthines) were isolated from Spigelia anthelmia (Loganiaceae). The effects of these compounds on the feeding behavior and performance (with and without piperonyl butoxide pretreatment) of Spodoptera littoralis larvae and Leptinotarsa decemlineata adults indicate that some strongly deterred these insects, L. decemlineata being less sensitive than S. littoralis. Their antifeedant effects did not parallel their toxic action. Additionally, more than 60% of the nonalkaloidal ryanoids were antifeedants and/or toxic in contrast to 30% of active alkaloidal ones, supporting the hypothesis of a ryanodol-specific mode of action in insects.

PMID: 10552828 [PubMed - indexed for MEDLINE]

Spiganthine, the cardioactive principle of Spigelia anthelmia.

Achenbach H, Hubner H, Vierling W, Brandt W, Reiter M.

Institut fur Pharmazie und Lebensmittelchemie der Universitat Erlangen, Germany.

Spiganthine [1] was isolated as the main cardioactive principle from medicinally used extracts of Spigelia anthelmia. Its structure was established by spectroscopic methods. The biological effect of spiganthine is characterized by a delay in contraction development of the heart muscle.

PMID: 7561902 [PubMed - indexed for MEDLINE]

Synergetic analgesic effect of the combination of arnica and hydroxyethyl salicylate in ethanolic solution following cutaneous application by transcutaneous electrostimulation.


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A combination of the active agents arnica and hydroxyethyl salicylate (HES) in ethanolic solution (Sportino Acute Spray) is cutaneously applied for the treatment of sports injuries and diseases of the locomotor apparatus. The aim was to examine the efficacy and synergism of the single substances and the combination with regard to the analgesic effect after cutaneous application as well as to validate the method of transcutaneous electronic stimulation as a method of measuring the analgesic effect. In the present article, the method of transcutaneous electrostimulation was used in a randomized, controlled, single-blind trial on healthy volunteers to provide objective evidence that the combination of active agents displays a significantly greater analgesic effect than the individual active agents. Thus there is synergy between the active agents arnica and hydroxyethyl salicylate in the combination preparation. In addition, the effect of the vehicle ethanol and the reference substance water could be determined within the framework of these comparative experiments and the difference between the combination preparation and the individual substances arnica and HES could be shown. The method of transcutaneous electrostimulation used for the objective measurement of the analgesic effect was validated.

Publication Types:
Clinical Trial
Randomized Controlled Trial

PMID: 14732966 [PubMed - indexed for MEDLINE]

Comment on:
Plast Reconstr Surg. 2002 Sep 1;110(3):1000; author reply 1000-1.
Arnica.

Lawrence WT; Plastic Surgery Educational Foundation DATA Committee.

tlawrence@kumc.edu

Publication Types:
Comment

PMID: 12973238 [PubMed - indexed for MEDLINE]

Antibacterial activity of medicinal plant extracts against periodontopathic bacteria.

Iauk L, Lo Bue AM, Milazzo I, Rapisarda A, Blandino G.

Department of Microbiological Sciences, University of Catania, Via Androne 81, 95124 Catania, Italy.

This study was performed to evaluate the antibacterial activity of Althaea officinalis L. roots, Arnica montana L. flowers, Calendula officinalis L. flowers, Hamamelis virginiana L. leaves, Illicium verum Hook. fruits and Melissa officinalis L. leaves, against anaerobic and facultative aerobic periodontal bacteria: Porphyromonas gingivalis, Prevotella spp., Fusobacterium nucleatum, Capnocytophaga gingivalis, Veilonella parvula, Eikenella corrodens, Peptostreptococcus micros and Actinomyces odontolyticus. The methanol extracts of H. virginiana and A. montana and, to a lesser extent, A. officinalis were shown to possess an inhibiting activity (MIC ≤ 2048 mg/L) against many of the species tested. In comparison, M. officinalis and C. officinalis extracts had a lower inhibiting activity (MIC ≥ 2048 mg/L) against all the tested species with the exception of Prevotella sp. Illicium verum methanol extract was not very active though it had a particular good activity against E. corrodens. The results suggest the use of the alcohol extracts of H. virginiana, A. montana and A. officinalis for topical medications in periodontal prophylactics. Copyright 2003 John Wiley & Sons, Ltd.

PMID: 12820224 [PubMed - indexed for MEDLINE]

[Arnica: new insights on the molecular mode of action of a traditional medicinal plant]

[Article in German]

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Preparations from Arnica flowers have been used in traditional medicine since a long time for the treatment of inflammatory diseases. Sesquiterpene lactones are considered as their main active compounds. Previously, it was shown that these natural products attack inflammatory processes at a very central point by inhibiting the transcription factors NF-kappa B and NF-AT at micromolar concentrations. Both transcription factors regulate the transcription of genes encoding for many inflammatory mediators. Thus, these new insights on their molecular mode of action are an important contribution for a better understanding of the antiinflammatory activity of preparations from Arnica. First clinical studies show that they can support the treatment of rheumatic diseases. The agreed use is important to avoid undesirable side effects. Copyright 2003 S. Karger GmbH, Freiburg

Publication Types:
Review
Review, Tutorial

PMID: 12808362 [PubMed - indexed for MEDLINE]

Arnica montana gel in osteoarthritis of the knee: an open, multicenter clinical trial.

Knuesel O, Weber M, Suter A.
This open multicenter trial investigated the safety and efficacy of an Arnica montana fresh plant gel, applied twice daily, in 26 men and 53 women with mild to moderate osteoarthritis (OA) of the knee. After 3 and 6 weeks, significant decreases in median total scores on the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) were evident in the intention-to-treat and per-protocol populations (both \( P < .0001 \)). Scores on the pain, stiffness, and function subscales also showed significant reductions at these timepoints. The overall local adverse-event rate of 7.6% included only one allergic reaction. Sixty-nine patients (87%) rated the tolerability of the gel as "good" or "fairly good," and 76% would use it again. Topical application of Arnica montana gel for 6 weeks was a safe, well-tolerated, and effective treatment of mild to moderate OA of the knee.

Publication Types:
Clinical Trial
Multicenter Study

PMID: 12539881 [PubMed - indexed for MEDLINE]

Contact sensitization from Compositae-containing herbal remedies and cosmetics.

Paulsen E.

National Allergy Research Center for Consumer Products, Gentofte, Denmark.

The Compositae (Asteraceae) family of plants is currently an important cause of allergic plant contact dermatitis in Europe. The family comprises some of the oldest and most valued medicinal plants, and the increasing popularity of herbal medicine and cosmetics may theoretically result in a growing number of Compositae sensitizations from these sources. According to the literature at least 15 species, including among others arnica (Arnica montana), German and Roman chamomile (Chamomilla recutita and Chamaemelum nobile), marigold (Calendula officinalis), Echinacea and elecampane (Inula helenium), have been suspected of sensitization or elicitation of Compositae dermatitis. Epidemiological data are available for 2 species only, arnica and German chamomile, the rest of the evidence being anecdotal. Based on this, sensitization seems to occur relatively frequently with a few species such as arnica and elecampane, and occurs rarely with the majority, especially the widely used German chamomile. Sesquiterpene lactones are the most important allergens, but there are a few cases of sensitization from a coumarin, a sesquiterpene alcohol and a thiophene. The risk of elicitation of dermatitis by using Compositae-containing products in Compositae-sensitive individuals is by-and-large unknown.

Publication Types:
Review
Review, Tutorial

PMID: 12492516 [PubMed - indexed for MEDLINE]

Anti-trypanosomal activity of helenalin and some structurally related sesquiterpene lactones.

Schmidt TJ, Brun R, Willuhn G, Khalid SA.

Institut fur Pharmazeutische Biologie der Heinrich-Heine-Universitat, Dusseldorf,
Germany. schmidt@uni-duesseldorf.de

The anti-trypanosomal activity of six sesquiterpene lactones (helenalin, mexicanin I, 11alpha,13-dihydrohelenalin acetate, chamissonolide, ivalin and isoalantolactone) against the African Trypanosoma brucei rhodesiense and American T. cruzi was investigated. All tested compounds were found active towards both parasites, the former being generally more sensitive. Helenalin was the most active compound in the series with IC50 values of 0.051 and 0.695 microM against T. b. rhodesiense and T. cruzi, respectively. The low IC50 value for T. b. rhodesiense indicates that helenalin type compounds may be interesting candidates for further evaluation.

PMID: 12221603 [PubMed - indexed for MEDLINE]

Effects of topical arnica gel on post-laser treatment bruises.
Alonso D, Lazarus MC, Baumann L.
Department of Dermatology and Cutaneous Surgery, University of Miami School of Medicine, Miami, Florida 33125, USA.

BACKGROUND: Claims have been made suggesting that topical arnica prevents and speeds the resolution of bruises, yet there are no well-designed placebo-controlled studies to date evaluating topical arnica's effect on bruising.
OBJECTIVE: To compare the efficacy of topical arnica in the prevention and resolution of laser-induced bruising.
METHODS: Nineteen patients with facial telangiectases were enrolled in this randomized, double-blinded, placebo-controlled study and were divided into pretreatment and posttreatment groups. The pretreatment group applied arnica with vehicle to one side of the face and vehicle alone to the other side of the face twice a day for 2 weeks prior to laser treatment. The posttreatment group followed the same procedure for 2 weeks after laser treatment. On day 0, all patients were treated for facial telangiectases using a 585 nm pulsed dye laser. Bruising was assessed using a visual analog scale on days 0, 3, 7, 10, 14, and 17 by the patient and the physician. In addition, photographs taken at each of the follow-up visits were later assessed by a second physician using the visual analog scale.
RESULTS: There was no statistically significant difference between the mean scores of arnica and vehicle (P = 0.496) and the mean scores of arnica and vehicle (P = 0.359) in the pretreatment and posttreatment groups, respectively.
CONCLUSION: No significant difference was found between topical arnica and vehicle in the prevention or resolution of bruising.

Publication Types:
Clinical Trial
Randomized Controlled Trial

PMID: 12174058 [PubMed - indexed for MEDLINE]

Studies on the anti-inflammatory activity of phytopharmaceuticals prepared from Arnica flowers.
Institute of Pharmaceutical Biology, University of Freiburg, Freiburg, Germany.

Phytopharmaceuticals prepared from flowerheads of Arnica montana of Spanish origin and of the new type "Arbo", which can be easily and economically cultivated, were studied for their capability to impair activation of the transcription factors NF-kappa B and NF-AT. Both proteins are responsible for the transcription of genes encoding various inflammatory mediators.
Additionally, their influence on the release of the cytokines IL-1 and TNF-alpha were examined. The inhibitory activities correlate with their quantitative and qualitative content of sesquiterpene lactones (Sls). Moreover, it was shown that the inhibitory potency of 11 alpha,13-dihydrohelenalin derivatives being the main Sls in the Spanish flowers depend on their esterification. Compounds with unsaturated acyl moieties, such as methacrylate and tiglinate, exhibited a stronger activity in the NF-kappa B EMSA as well as in the croton oil ear test in mice than the acetate derivative.

PMID: 12058311 [PubMed - indexed for MEDLINE]

Use of Arnica to relieve pain after carpal-tunnel release surgery.
Jeffrey SL, Belcher HJ.
Department of Plastic Surgery of Queen Victoria Hospital in West Sussex, England.

CONTEXT: Arnica is commonly used by the public as a treatment for bruising and swelling. OBJECTIVE: To assess whether Arnica administration affects recovery from hand surgery. DESIGN: Double-blind, randomized comparison of Arnica administration versus placebo. SETTING: Specialist hand surgery unit at the Queen Victoria NHS Trust. PARTICIPANTS: Thirty-seven patients undergoing bilateral endoscopic carpal-tunnel release between June 1998 and January 2000. INTERVENTION: Homeopathic Arnica tablets and herbal Arnica ointment compared to placebos. MAIN OUTCOME MEASURES: Grip strength, wrist circumference, and perceived pain measured 1 and 2 weeks after surgery. RESULTS: No difference in grip strength or wrist circumference was found between the 2 groups. However, there was a significant reduction in pain experienced after 2 weeks in the Arnica-treated group (P<.03). CONCLUSIONS: The role of homeopathic and herbal agents for recovery after surgery merits further investigation.

Publication Types:
Clinical Trial
Randomized Controlled Trial

PMID: 11892685 [PubMed - indexed for MEDLINE]

Contact Dermatitis. 2001 Nov;45(5):269-72.
The seamy side of natural medicines: contact sensitization to arnica (Arnica montana L.) and marigold (Calendula officinalis L.).
Reider N, Komericki P, Hausen BM, Fritsch P, Aberer W.
Department of Dermatology and Venereology, University of Innsbruck, Austria.

Medical remedies of plant origin have gained increasing popularity in recent years. Both anaphylactic and eczematous allergic reactions are on the rise, accordingly. Arnica and marigold, both of the Compositae family, are in widespread use, but only limited data are available on their allergenic potential. We tested 443 consecutive patients, in addition to the European standard and other series, with Compositae mix, sesquiterpene lactone mix, arnica, marigold, and propolis. 5 subjects (approximately 1.13%) reacted to arnica, 9 (approximately 2.03%) to marigold. The Compositae mix was positive in 18 cases (approximately 4.06%). Among them were 3 out of 5 individuals with a sensitization to arnica, and 4 out of 9 who reacted to marigold. Sensitization to arnica and marigold was often accompanied by reactions to nickel, Myroxylon Pereirae resin, fragrance mix, propolis, and colophonium. We conclude that Compositae allergy contributes significantly to the epidemiology of contact dermatitis and that sensitization to arnica and marigold cannot be assessed by testing with the Compositae or sesquiterpene mix alone. As extracts of these
plants are frequently used in occupational and cosmetic products, patch testing with additional plant extracts or adjustment of the commercial Compositae mix to regional conditions is recommended.

PMID: 11722485 [PubMed - indexed for MEDLINE]

Final report on the safety assessment of Arnica montana extract and Arnica montana.

[No authors listed]

Arnica Montana Extract is an extract of dried flowerheads of the plant, Arnica montana. Arnica Montana is a generic term used to describe a plant material derived from the dried flowers, roots, or rhizomes of A. montana. Common names for A. montana include leopard's bane, mountain tobacco, mountain snuff, and wolf's bane. Two techniques for preparing Arnica Montana Extract are hydroalcoholic maceration and gentle disintegration in soybean oil. Propylene glycol and butylene glycol extractions were also reported. The composition of these extracts can include fatty acids, especially palmitic, linoleic, myristic, and linolenic acids, essential oil, triterpenic alcohols, sesquiterpene lactones, sugars, phytosterols, phenol acids, tannins, choline, inulin, phalin, arnicin, flavonoids, carotenoids, coumarins, and heavy metals. The components present in these extracts are dependent on where the plant is grown. Arnica Montana Extract was reported to be used in almost 100 cosmetic formulations across a wide range of product types, whereas Arnica montana was reported only once. Extractions of Arnica Montana were tested and found not toxic in acute toxicity tests in rabbits, mice, and rats; they were not irritating, sensitizing, or phototoxic to mouse or guinea pig skin; and they did not produce significant ocular irritation. In an Ames test, an extract of A. montana was mutagenic, possibly related to the flavonoid content of the extract. No carcinogenicity or reproductive/developmental toxicity data were available. Clinical tests of extractions failed to elicit irritation or sensitization, yet Arnica dermatitis, a delayed type IV allergy, is reported in individuals who handle arnica flowers and may be caused by sesquiterpene lactones found in the flowers. Ingestion of A. montana-containing products has induced severe gastroenteritis, nervousness, accelerated heart rate, muscular weakness, and death. Absent any basis for concluding that data on one member of a botanical ingredient group can be extrapolated to another in the group, or to the same ingredient extracted differently, these data were not considered sufficient to assess the safety of these ingredients. Additional data needs include current concentration of use data; function in cosmetics; ultraviolet (UV) absorption data—if absorption occurs in the UVA or UVB range, photosensitization data are needed; gross pathology and histopathology in skin and other major organ systems associated with repeated dermal exposures; dermal reproductive/developmental toxicity data; inhalation toxicity data, especially addressing the concentration, amount delivered, and particle size; and genotoxicity testing in a mammalian system; if positive, a 2-year dermal carcinogenicity assay performed using National Toxicology Program (NTP) methods is needed. Until these data are available, it is concluded that the available data are insufficient to support the safety of these ingredients in cosmetic formulations.

Publication Types:
Review
Review, Tutorial

PMID: 11558636 [PubMed - indexed for MEDLINE]

[Arnica for hematomas after venous operations?]

[Article in German]
Siebenwirth J, Whitmarsh T.

Publication Types:
Clinical Trial
Multicenter Study
Randomized Controlled Trial

PMID: 11525188 [PubMed - indexed for MEDLINE]

Potential for danger with Arnica montana.

Daane SP.

Publication Types:
Letter

PMID: 11293536 [PubMed - indexed for MEDLINE]

In vitro antimicrobial activity of propolis and Arnica montana against oral pathogens.

Koo H, Gomes BP, Rosalen PL, Ambrosano GM, Park YK, Cury JA.

School of Dentistry of Piracicaba, State University of Campinas, Areiaio, S.P., Brazil.

Arnica and propolis have been used for thousands of years in folk medicine for several purposes. They possess several biological activities such as anti-inflammatory, antifungal, antiviral and tissue regenerative, among others. Although the antibacterial activity of propolis has already been demonstrated, very few studies have been done on bacteria of clinical relevance in dentistry. Also, the antimicrobial activity of Arnica has not been extensively investigated. Therefore the aim here was to evaluate in vitro the antimicrobial activity, inhibition of adherence of mutans streptococci and inhibition of formation of water-insoluble glucan by Arnica and propolis extracts. Arnica montana (10%, w/v) and propolis (10%, w/v) extracts from Minas Gerais State were compared with controls. Fifteen microorganisms were used as follows: Candida albicans--NTCC 3736, F72; Staphylococcus aureus--ATCC 25923; Enterococcus faecalis--ATCC 29212; Streptococcus sobrinus 6715; Strept. sanguis--ATCC 10556; Strept. cricetus--HS-6; Strep. mutans--Ingbrit 1600; Strep. mutans--OMZ 175; Actinomyces naeslundii--ATCC 12104, W 1053; Act. viscosus OMZ 105; Porphyromonas gingivalis; Porph. endodontalis and Prevotella dentica (the last three were clinical isolates). Antimicrobial activity was determined by the agar diffusion method and the zones of growth inhibition were measured. To assess cell adherence to a glass surface, the organisms were grown for 18 h at 37 degrees C in test-tubes at a 30 degree angle. To assay water-insoluble glucan formation, a mixture of crude glucosyltransferase and 0.125 M sucrose was incubated for 18 h at 37 degrees C in test-tubes at a 30 degree angle. Arnica and propolis extracts (20 microl) were added to these tubes to evaluate the % of inhibition of cell adherence and water-insoluble glucan formation. The propolis extract significantly inhibited all the microorganisms tested (p < 0.05), showing the largest inhibitory zone for Actinomyces spp. The Arnica extract did not demonstrate significant antimicrobial activity. Cell adherence and water-insoluble glucan formation were almost completely inhibited by the propolis extract at a final concentration of 400 microg/ml and 500 microg/ml, respectively. The Arnica extract showed slight inhibition of the adherence of the growing cells (19% for Strep. mutans and 15% for Strep. sobrinus) and of water-insoluble glucan formation (29%) at these same concentrations. Thus, the propolis extract showed in vitro antibacterial activity, inhibition of cell adherence and inhibition of water-insoluble glucan formation.
glucan formation, while the Arnica extract was only slightly active in those three conditions.

PMID: 10716618 [PubMed - indexed for MEDLINE]

[Effect of Arnica montana tincture on some hydrolytic enzyme activities of rat liver in experimental toxic hepatitis]

[Article in Ukrainian]
Iaremii IM, Meshchyshen IF, Hrihor'ieva NP, Kostiuk LS.

Bucovinien State Medical Academy, Chernivtsi, Ukraine.

Effects of tinctura arnica on arginase, adenosine triphosphatase, glucose-6-phosphatase and 5'-nucleotidase activities of rats liver in case of experimental toxic hepatitis have been studied. Toxic hepatitis was caused by 2 times interstomach administration of 0.25 ml oil solution of carbon tetrachloride per 100 g of animal weight. 20 ml/100 g of tinctura arnica was administered every day per os for 14 days. The enzyme activities have been investigated at 3, 7 and 17 days. A significant demention of a studied hydrolytic enzyme activities in rats liver at intoxication of the body by CCl4 has been shown. It has been established that tinctura arnica administered per os to intoxicated animals sped up the normalization of hydrolytic enzyme activities in rat liver.

PMID: 10402655 [PubMed - indexed for MEDLINE]

[Effect of Arnica montana on the state of lipid peroxidation and protective glutathione system of rat liver in experimental toxic hepatitis]

[Article in Ukrainian]
Iamemii IM, Grygor'iea NP, Meshchyshen IF.

Bukovinien State Medical Academy, Chernivtsi.

Effects of Tinctura Arnica on lipids peroxidation and on the protective glutathiones system of liver in rats in case of experimental toxic hepatitis have been studied. Toxic hepatitis is accompanied by deep alterations of the oxidant-antioxidant status of the body. Intoxication of the body by CCl4 results in intensification of the free radicals formation particularly in liver: accumulation of lipids peroxidation molecular products, glutathione system enzyme activity inhibition in early terms and its partial restoration in remote terms has been seen. Our studies revealed that Arnica montana infusion inhibits the rate of lipids peroxidation products formation, affects the glutathione system enzymes activity.

PMID: 9848164 [PubMed - indexed for MEDLINE]

Leukemia-related Sweet’s syndrome elicited by pathergy to Arnica.

Delmonte S, Brusati C, Parodi A, Rebora A.

Publication Types:
Case Reports
Letter

PMID: 9840982 [PubMed - indexed for MEDLINE]

Contact dermatitis caused by sesquiterpene lactones.

Spettoli E, Silvani S, Lucente P, Guerra L, Vincenzi C.

Department of Dermatology, University of Bologna, Bologna, Italy.

BACKGROUND: Compositae dermatitis involves workers such as gardeners, florists, and farmers, and less commonly people not employed in occupations at risk. OBJECTIVE: To report a case of contact sensitization caused by Compositae, the source of sensitization being both pesticides and plants.

METHODS: A 65-year-old man, whose hobby was gardening, was affected by a chronic eczema of the face and the hands for 6 months that reoccurred after using fertilizers and handling plants. Patch tests with the International Contact Dermatitis Research Group standard series, the plants series and pesticides series (Hermal Trolab) were performed.

RESULTS: We found the following positive reactions at day 2 and day 3: sesquiterpene lactone mix, 0.1% in petrolatum; arnica tincture, 20% in petrolatum; pyrethrum, 2% in petrolatum; captafol, 0.1% in petrolatum.

CONCLUSION: Pyrethrum and its derivatives are made from Compositae plants; the arnica tincture is obtained from Arnica montana, which is also a member of the Compositae family. In our patient, the clinical manifestations were certainly caused by the exposure to sesquiterpene lactones, confirmed by the positive patch test to sesquiterpene lactone mix.

Publication Types:
Case Reports

PMID: 9471988 [PubMed - indexed for MEDLINE]


Comment in:
Biol Chem. 1997 Sep;378(9):935.

Helenalin, an anti-inflammatory sesquiterpene lactone from Arnica, selectively inhibits transcription factor NF-kappaB.

Lyss G, Schmidt TJ, Merfort I, Pahl HL.

Institut fur Pharmazeutische Biologie, Universitat Freiburg, Germany.

Alcoholic extracts prepared from Arnicae flos, the collective name for flowerheads from Arnica montana and A. chamissonis ssp. foliosa, are used therapeutically as anti-inflammatory remedies. The active ingredients mediating the pharmacological effect are mainly sesquiterpene lactones, such as helenalin, 11alpha,13-dihydrohelenalin, chamissonolid and their ester derivatives. While these compounds affect various cellular processes, current data do not fully explain how sesquiterpene lactones exert their anti-inflammatory effect. We show here that helenalin, and, to a much lesser degree, 11alpha,13-dihydrohelenalin and chamissonolid, inhibit activation of transcription factor NF-kappaB. This difference in efficacy, which correlates with the compounds' anti-inflammatory potency in vivo, may be explained by differences in structure and conformation. NF-kappaB, which resides in an inactive, cytoplasmic complex in unstimulated cells, is activated by phosphorylation and degradation of its inhibitory subunit, IkappaB. Helenalin inhibits NF-kappaB activation in response to four different stimuli in T-cells, B-cells and epithelial cells and abrogates kappaB-driven gene expression. This inhibition is selective, as the activity of four other transcription factors, Oct-1, TBP, Sp1 and STAT 5 was not affected. We show that inhibition is not due to a direct modification of the active NF-kappaB heterodimer. Rather, helenalin modifies the NF-kappaB/IkappaB complex, preventing the release of IkappaB. These data suggest a molecular mechanism for the anti-inflammatory effect of sesquiterpene lactones, which differs from that of other nonsteroidal anti-inflammatory drugs (NSAIDs), indomethacin and acetyl salicylic acid.
Granny's remedy explained at the molecular level: helenalin inhibits NF-kappaB.

Schaffner W.

Publication Types:
Comment
Editorial

PMID: 9348102 [PubMed - indexed for MEDLINE]

Cytotoxicity of flavonoids and sesquiterpene lactones from Arnica species against the GLC4 and the COLO 320 cell lines.


Department of Pharmaceutical Biology, University Centre for Pharmacy, University of Groningen, The Netherlands.

The cytotoxicity of 21 flavonoids and 5 sesquiterpene lactones, as present in Arnica species, was studied in GLC4, a human small cell lung carcinoma cell line, and in COLO 320, a human colorectal cancer cell line, using the microculture tetrazolium (MTT) assay. Following continuous incubation, most flavonoids showed moderate to low cytotoxicity, as compared with the reference compound cisplatin (IC50 = 1.1 microM against GLC4 and 2.9 microM against COLO 320). Their IC50 values varied from 17 to > 200 microM. The most toxic compound was the flavone jaceosidin. Of the sesquiterpene lactones tested, helenalin, possessing both the reactive alpha-methylene-gamma-lactone moiety and a reactive alpha,beta-unsubstituted cyclopentenone ring, displayed the strongest cytotoxicity. For 2 h exposure, its IC50 value was 0.44 microM against GLC4 and 1.0 microM against COLO 320. COLO 320 was more sensitive than GLC4 for many flavonoids (especially for flavones), but more resistant to the cytotoxic effect of the sesquiterpene lactones bearing an exocyclic methylene group fused to the lactone function.

PMID: 7997472 [PubMed - indexed for MEDLINE]

[Immunologic studies of plant combination preparations. In-vitro and in-vivo studies on the stimulation of phagocytosis]

[Article in German]

Wagner H, Jurcic K.

Institut fur Pharmazeutische Biologie, Ludwig-Maximilians-Universitat, Munchen.

The activity of phagocytosis was tested in the in vitro granulocyte test and the in vivo carbon-clearance-test in the mouse for an extract combination consisting of four plant extracts (Echinacea angustifolia, Eupatorium perfoliatum, Baptisia tinctoria and Arnica montana). In both immune models, a step by step stimulation of the activity of phagocytosis by the addition of the four plant extracts was shown with an increase in effectiveness of partially over 50% in comparison to the pure Echinacea angustifolia mono-extract. The extract combination showed also in both test models a higher efficiency than two other
differently composed combination preparations and two Echinacea
mono-preparations.

PMID: 1799388 [PubMed - indexed for MEDLINE]

Immunologically active polysaccharides of Arnica montana cell cultures.

Puhlmann J, Zenk MH, Wagner H.
Institute of Pharmaceutical Biology, University of Munich, F.R.G.

From the nutrition medium of Arnica montana cell cultures two homogeneous
polysaccharides, an acidic arabinol-3,6-galactan-protein with mean Mr of
100,000 and a neutral fucogalactoxyloglucan with mean Mr of 22,500 have
been isolated by DEAE-Sepharose CL-6B and Sephacryl S-400 column
chromatography. Their structures were elucidated mainly by methylation
analysis, partial acidic and enzymatic hydrolysis and 13C NMR spectroscopy.
The fucogalactoxyloglucan shows a pronounced enhancement of phagocytosis
in vivo. The arabinol-3,6-galactan-protein displays a strong anticomplementary
effect and stimulates macrophages to excrete the tumour necrosis factor (TNF
alpha).

PMID: 1367382 [PubMed - indexed for MEDLINE]

Helenalin and 11 alpha,13-dihydrohelenalin, two constituents from Arnica
montana L., inhibit human platelet function via thiol-dependent pathways.

Institut fur Pharmakologie, Heinrich-Heine-Universitat Dusseldorf, FRG.

This study investigates the effect on human platelet function of two
sesquiterpene lactones from Arnica montana L., helenalin (H) and 11 alpha,13-
dihydrohelenalin (DH). Both compounds inhibited collagen-induced platelet
aggregation, thromboxane formation and 5-hydroxytryptamine secretion in a
concentration-dependent manner at 3-300 microM. When arachidonic acid was
used as stimulus, thromboxane formation remained unaffected despite of
inhibition of platelet aggregation. Both H and DH reduced the number of
acid-soluble sulfhydryl groups in platelets, by up to 78% at anti-aggregatory
concentrations. Moreover, H- and DH-induced platelet inhibition could be
prevented by the thiol containing amino acid cysteine. It is concluded that H and
DH inhibit platelet function via interaction with platelet sulfhydryl groups,
probably associated with reduced phospholipase A2 activity.

PMID: 2116680 [PubMed - indexed for MEDLINE]

Arzneimittelforschung. 1985;35(7):1069-75.
[Immunostimulating action of polysaccharides (heteroglycans) from higher
plants]

[Article in German]

Wagner H, Proksch A, Riess-Maurer I, Vollmar A, Odenthal S, Stuppner H,
Juric K, Le Turdu M, Fang JN.

From the water or alcaline-water extracts of Echinacea purpurea (L.) Moench.
and -angustifolia DC., Eupatorium cannabium L. and -perfoliatum L.,
Chamomilla recutita L. Rauscher, Calendula officinalis L., Baptisia tinctoria (L.)
et Schult., and Eleutherococcus (Acanthopanax) senticosus Maxim.
polysaccharide fractions with molecular weights in the range of 25 000 to 500
000 and higher have been isolated, which, according to the granulocytes- and carbon clearance tests, showed significant immunostimulating activities. The isolated compounds belong to the group of watersoluble, acidic branched-chain heteroglycans. Their immunostimulating activity is compared and discussed with respect to other polysaccharides of biological activity.

PMID: 4052142 [PubMed - indexed for MEDLINE]

Metronidazole (Flagyl) and Arnica Montana in the prevention of post-surgical complications, a comparative placebo controlled clinical trial.

Kaziro GS.

A double blind trial, was designed, in which 118 patients undergoing the removal of impacted wisdom teeth were randomly divided into the following groups; 41 patients received Metronidazole, 39 patients received Arnica Montana, 38 patients received the placebo. Metronidazole was more effective in pain control than Arnica (p less than 0.001) and placebo (p less than 0.01). It prevented swelling better than Arnica (p less than 0.01) and placebo (p less than 0.05) and was more effective in promoting healing than Arnica (p less than 0.01) and placebo (p greater than 0.02). Arnica Montana appeared to give rise to greater pain than placebo (p less than 0.05) and caused more swelling than the placebo (p less than 0.01).

Publication Types:
Clinical Trial
Randomized Controlled Trial

PMID: 6365158 [PubMed - indexed for MEDLINE]

[Immunostimulant action of polysaccharides (heteroglycans) from higher plants. Preliminary communication]

[Article in German]


From the water or alcaline-water extracts of Echinacea purpurea (L.) Moench and -angustifolia DC., Eupatorium cannabinum L. and -perfoliatum L., Chamomilla recutita (L.) (Rauscher), Calendula officinalis L., Baptisia tinctoria (L.) R.B., Achyrocline satureoides DC., Arnica montana L., Sabal serrulata Roem et Schult. and Eleutherococcus senticosus Maxim. polysaccharide fractions with molecular weights in the range of 25 000 to 500 000 and higher have been isolated, which, according to the granulocytes- and carbon clearance tests, showed significant immunostimulating activities. The isolated compounds belong to the group of water-soluble, acidic heteroglycanes. The linkages in the different polysaccharides do not represent a uniform structure type.

PMID: 6541484 [PubMed - indexed for MEDLINE]

[Efficacy of the phenol compounds of Arnica in toxic lesion of the liver]

[Article in Russian]

Marchishin SM.

Experiments on rats with toxic liver injury induced by carbon tetrachloride have shown that the preparation presenting a sum of phenolic compounds of Arnica
montana and foliated Arnica favours a more complete recovery of the bile secretion intensity, synthesis and excretion with bile of bile acids and bilirubin, and cholesterol excretion. It also accelerates the recovery of activity of serum enzymes.

PMID: 6852212 [PubMed - indexed for MEDLINE]


Herrmann HD, Willuhn G, Hausen BM.

PMID: 704699 [PubMed - indexed for MEDLINE]

Ann Otolaryngol Chir Cervicofac. 1977 Jan-Feb;94(1-2):65. [Arnica montana in facial injuries (proceedings)]

[Article in French]

[No authors listed]

PMID: 855982 [PubMed - indexed for MEDLINE]


[Article in German]

List PH, Friebel B.

PMID: 4134079 [PubMed - indexed for MEDLINE]


[Article in German]

Vanhaelen M.

PMID: 4732114 [PubMed - indexed for MEDLINE]


[Article in German]

Willuhn G.

PMID: 4403598 [PubMed - indexed for MEDLINE]


[Article in French]

Duquenois P.

Publication Types:
Historical Article

PMID: 4927860 [PubMed - indexed for MEDLINE]
[Arnica montana L.]

[Article in Dutch]

Labadie RP.

PMID: 5681721 [PubMed - indexed for MEDLINE]

[Contribution to the knowledge of the substances contained in Arnica montana L.]

[Article in German]

Saner A, Leupin K.

PMID: 5926222 [PubMed - indexed for MEDLINE]

[THERAPEUTIC EXPERIENCES WITH ARNICA MONTANA]

[Article in German]

ERLEY E.

PMID: 14263823 [PubMed - OLDMEDLINE for Pre1966]

Arch Pharm. 1963 May;296:273-81.
[Some new constituents from the roots of Arnica montana]

[Article in German]

SCHULTE KE, REISCH J, RUCKER G.

PMID: 13987185 [PubMed - OLDMEDLINE for Pre1966]

[Arnica montana as a medicinal plant]

[Article in German]

STIRNADEL M.

PMID: 13834712 [PubMed - OLDMEDLINE for Pre1966]

[Arnica montana as a medicinal plant.]

[Article in German]

STIRNADEL M.

PMID: 13676103 [PubMed - OLDMEDLINE for Pre1966]

Arch Pharm Ber Dtsch Pharm Ges. 1956 Feb;289(2):75-81.
[Study on the constituents of Arnica montana L.]

[Article in German]

CORCILIUS F.
PMID: 13328059 [PubMed - OLDMEDLINE for Pre1966]

[Cholagogue action of Arnica montana.]

[Article in Russian]

SKAKUN NP, ZHULKEVICH VA.

PMID: 14391392 [PubMed - OLDMEDLINE for Pre1966]

[Possible testing of tinctures of Arnica montana L.]

[Article in German]

GRUNER S, SPAICH W.

PMID: 13198192 [PubMed - OLDMEDLINE for Pre1966]

[Arnica montana. III.]

[Article in Undetermined Language]

FABER K.

PMID: 13073437 [PubMed - OLDMEDLINE for Pre1966]

Pharmazie. 1953 Apr;8(3):286-98; contd.
[Arnica; Arnica montana. II]

[Article in Undetermined Language]

FABER K.

PMID: 13073424 [PubMed - OLDMEDLINE for Pre1966]

Pharmazie. 1953 Feb;8(2):179-87; contd.
[Arnica (Arnica montana)]

[Article in Undetermined Language]

FABER K.

PMID: 13073403 [PubMed - OLDMEDLINE for Pre1966]

[Arnica montana]

[Article in Undetermined Language]

KREITMAIR H.

PMID: 12983199 [PubMed - OLDMEDLINE for Pre1966]

Germinated brown rice extract shows a nutraceutical effect in the recovery of chronic alcohol-related symptoms.

Arroz - Oryza sativa
Chronic ethanol abuse can cause liver damage and unfavorable lipid profiles in humans and rodents. Phytonutrients have the potential to partially reverse some of the adverse effects of alcoholism. In this study, a germinated brown rice grown under conditions that favor high concentrations of gamma-aminobutyric acid (GABA) was evaluated for protective effects against the toxic consequences of chronic ethanol use. Serum and hepatic lipid concentrations and enzymes indicative of liver damage were determined in mice chronically administered ethanol. Balb/c mice were fed with either AIN-76 diet (control), control diet plus ethanol, or control diet plus ethanol and supplemental brown rice extract for 30 days. The extract naturally contained 841 nmol GABA per milliliter and was prepared from germinated brown rice. Serum low-density lipoprotein cholesterol (LDL-C), liver aspartate aminotransferase, and liver alanine aminotransferase levels were increased in mice administered ethanol, but not in mice given ethanol and brown rice extract. The brown rice extract significantly increased serum and liver high-density lipoprotein cholesterol (HDL-C) concentrations. Furthermore, administration of the extract prevented ethanol-induced increases in liver triglyceride and total cholesterol concentrations. These findings raise the possibility that brown rice extracts containing a high level of GABA may have a nutraceutical role in the recovery from and prevention of chronic alcohol-related diseases.

PMID: 12935322 [PubMed - indexed for MEDLINE]

Preventive effect of fermented brown rice and rice bran on diethylnitrosoamine and phenobarbital-induced hepatocarcinogenesis in male F344 rats.

Katayama M, Sugie S, Yoshimi N, Yamada Y, Sakata K, Qiao Z, Iwasaki T, Kobayashi H, Mori H.

Department of Pathology, Gifu University School of Medicine, 40 Tsukasamachi, Gifu 500-8705, Japan.

Epidemiological and preclinical studies have suggested that nutrition plays an important role in the etiology of cancer. Our group previously demonstrated that rice germ or fermented brown rice has a preventive effect on colorectal carcinogenesis. The experiment described here was examined for the potential anticancer properties of brown rice fermented by Aspergillus Oryzae (FBRA) in male F344 rats using inhibition of diethylnitrosoamine (DEN) and phenobarbital (PB)-induced hepatocarcinogenesis as the measure of preventive efficacy when this agent was administered at 5% and 10% levels in diet during initiation phase (during and until 1 week after carcinogen treatment) or post-initiation phase (beginning 1 week after carcinogen treatment) of the carcinogenesis. Rats were sacrificed 20 weeks after the initiation of DEN treatment (200 mg/kg body weight, once weekly for 3 weeks). Expression of liver tumors was evaluated histopathologically. Administration of 10% FBRA in the diet during the initiation phase significantly decreased the incidence (43% vs. 8%) and multiplicity (0.5+/0.6 vs. 0.1+/0.3) of hepatocellular carcinoma (HCC) as compared to those given the control diet. In addition, 5% and 10% of FBRA in the diet during post-initiation phase significantly decreased the incidence of HCC (43% vs. 15% and 9%, respectively) and multiplicity of hepatocellular adenoma (4.7+/3.7 vs. 2.1+/2.2 and 2.4+/1.4, respectively) and HCC (0.5+/0.6 vs. 0.2+/0.4 and 0.1+/0.3, respectively). These data prove that FBRA has an inhibitory effect on the hepatocarcinogenesis in rats. FBRA could be a promising chemopreventive agent for human liver as well as colorectal neoplasia.
Modified rice bran beneficial for weight loss of mice as a major and acute adverse effect of Cisplatin.

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PMID: 12787263 [PubMed - indexed for MEDLINE]

Anti-stress and anti-fatigue effect of fermented rice bran.

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The anti-stress and anti-fatigue effects of a hot water extract of fermented rice bran (FRB) were investigated with Saccharomyces cerevisiae IFO 2346 on rats or mice. Oral administration (1 g/kg/day) of a hot water extract of FRB inhibited major changes in weight of the adrenal, thymus, spleen and thyroid, showing the anti-stress effect. A hot water extract of FRB also inhibited the increase of GPT and LDH activity, cholesterol and serum glucose levels. Administration (1 g/kg/day) for 2 weeks significantly prolonged the swimming time, resulting in an increase of the anti-fatigue effect. From these results, it can be considered that FRB has an anti-stress and anti-fatigue effect. Copyright 2002 John Wiley & Sons, Ltd.

PMID: 12410560 [PubMed - indexed for MEDLINE]

Effect of rice starch as a bath additive on the barrier function of healthy but SLS-damaged skin and skin of atopic patients.

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Rice starch added to bath water was studied for its possible beneficial effects on impaired barrier function as evaluated by transepidermal water loss measurements. The forearm skin of healthy volunteers was irritated by sodium lauryl sulphate. Exposure to rice-starch-containing bath water--twice daily for 15 min--led to a 20% improvement on the healing capacity of damaged skin. The beneficial effect was also observed for a rice-starch-containing lipid-free bath formulation, and an oil-in-water bath lotion enriched with evening primrose oil. Skin barrier function in patients with atopic dermatitis also improved after the addition of starch powder to bath water. Rice starch in powder or formulated in a bath product can therefore be recommended as a skin repair bathing additive for barrier damaged skin, particularly in the case of atopic dermatitis patients.

PMID: 12353708 [PubMed - indexed for MEDLINE]

Assessment of the ability of the antioxidant cocktail-derived from fermentation of plants with effective microorganisms (EM-X) to modulate oxidative damage in the kidney and liver of rats in vivo: studies upon the profile of poly- and mono-unsaturated fatty acids.

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The antioxidant cocktail EM-X derived from ferment of unpolished rice, papaya and sea weeds with effective microorganisms (EM) of lactic acid bacteria, yeast, and photosynthetic bacteria is widely available in South-East Asia. Oral administration of a EM-X to rats for 7 days inhibited the ferric-nitrilotriacetic acid (Fe-NTA)-dependent oxidation of fatty acids with protections directed towards docosahexanoic, arachidonic, docosapentanenoic acids, oleic, linoleic and eicosadienoic acids in the liver and kidney. But only the protections of oxidation to docosahexanoic, arachidonic acid in the kidney were statistically significant. Treatment of rats with EM-X prior to the intraperitoneal administration of Fe-NTA led to a reduction in the overall levels of conjugated dienes (CD) measured in the kidney by 27% and in the liver by 19% suggesting inhibition of lipid peroxidation in these organs. The levels of glutathione and alpha-tocopherol were largely unaffected suggesting that the protection by the regular strength of EM-X was confined to the inhibition of lipid peroxidation in vivo, a point dependent on the concentrations of bioactive flavonoids.

PMID: 12270679 [PubMed - indexed for MEDLINE]

Erratum in:

Protective effect of colored rice over white rice on Fenton reaction-based renal lipid peroxidation in rats.

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Rice has been one of the most important grains. While polished white rice is favored, colored strains of rice, red, or black, have been maintained for religious purposes in Japan. We studied whether feeding of unpolished colored rice instead of white rice ameliorates oxidative renal tubular damage in rats induced by ferric nitrolriacetate. Whereas renal lipid peroxidation was exacerbated in white rice-fed group in comparison with standard chow group, this exacerbation was not observed in red or black rice-fed groups. These changes were dependent on the proportion of colored rice to standard chow in the diet. Cyanidin 3-O-beta-D-glucoside was detectable neither in the serum nor kidney after one week of colored rice diet, but serum protocatechuic acid was significantly increased after black rice diet. There was a generalized decrease in the renal glutathione peroxidase activity in rice diet groups. Renal enzymatic activities of superoxide dismutase, glutathione S-transferase and NAD(P)H quinone reductase were not associated with the levels of lipid peroxidation. However, renal catalase activity was significantly increased in black rice-fed groups. These may partly explain the antioxidative effect. Furthermore, colored strains of rice are rich in proteins. Thus, our data warrants further investigation of the antioxidative effect of colored rice.

PMID: 12150546 [PubMed - indexed for MEDLINE]

Preventive effect of fermented brown rice and rice bran against colon...
cancerogenesis in male F344 rats.


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Epidemiological and preclinical studies demonstrate that nutrition plays an important role in the etiology of cancer. It has been reported that rice components, especially rice germ plays a key role in prevention of cancer. The experiments described here examined the potential anticancer properties of brown rice fermented by Aspergillus Oryzae (FBRA) in male F344 rats using inhibition of the formation of azoxymethene (AOM) induced aberrant crypt foci (ACF) and tumors in the colon as the measure of preventive efficacy. The agent was administered at 2.5 and 5% levels in the diet during the initiation phase (during and until 1 week after carcinogen treatment) and/or post-initiation phase (beginning 1 week after carcinogen treatment) of carcinogenesis. In the ACF and tumor studies, rats were sacrificed 5 or 40 weeks after the initiation of AOM treatment (15 mg/kg body weight, once weekly for 3 weeks), respectively. Colonic ACF and tumors were evaluated histopathologically. Administration of 2.5 and 5% FBRA in the diet continuously during initiation and post-initiation period significantly inhibited the ACF formation in rats treated with AOM, compared with rats treated with AOM alone (99+/-24.1 and 79+/-18.4 vs. 139.5+/-27.7, respectively). In addition, administration of 5% FBRA in the diet during the post-initiation phase significantly suppressed the incidence (44 vs.18%) and multiplicity (0.93+/-0.96 vs. 0.18+/-0.40) of colon adenocarcinomas as compared to those given the control diet. In addition, 5% FBRA in the diet during post-initiation phase caused significant inhibition of cell proliferation in the colonic mucosa as compared to the group fed the control diet (81% reduction, p<0.05). These observations demonstrated for the first time that FBRA inhibits colon tumor development in rats, and suggest that it is a promising dietary supplement for prevention of human colon cancer.

PMID: 12066215 [PubMed - indexed for MEDLINE]

Chemopreventive effects of coffee bean and rice constituents on colorectal carcinogenesis.

Mori H, Kawabata K, Matsunaga K, Ushida J, Fujii K, Hara A, Tanaka T, Murai H.

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Polyphenolic compound chlorogenic acid (CGA) known to be much contained in coffee beans was found to have a regressive effect on induced aberrant crypt foci (ACF) as well as on development of ACF in azoxymethene (AOM)-induced colorectal carcinogenesis in rats. Rice germ and gamma-aminobutyric acid-enriched defatted rice germ inhibited AOM-induced ACF formation and colorectal carcinogenesis in rats. Ferulic acid (FA) also known to be contained in coffee beans and rice prevented AOM-induced ACF formation and intestinal carcinogenesis in rats. Both of food factors, coffee and rice may be of benefit to prevention of human colorectal cancers.

Publication Types:
Review
Review, Tutorial

PMID: 11216469 [PubMed - indexed for MEDLINE]

Constituents of red yeast rice, a traditional Chinese food and medicine.
Ma J, Li Y, Ye Q, Li J, Hua Y, Ju D, Zhang D, Cooper R, Chang M.

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Detailed analyses were undertaken of the natural constituents of red yeast rice, a traditional Chinese medicine and food known for centuries to improve blood circulation. Preparation of red yeast rice following ancient methods by fermenting the fungal strain Monascus purpureus Went on moist and sterile rice indicated the presence of a group of metabolites belonging to the monacolin family of polyketides, together with fatty acids, and trace elements. The presence of these compounds may explain in part the cholesterol-lowering ability associated with this traditional Chinese food.

PMID: 11087463 [PubMed - indexed for MEDLINE]

Bangladeshi rural mothers prepare safer rice oral rehydration solution.

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Mothers in rural Bangladesh were trained to prepare and use either Rice-ORS (R-ORS) or Glucose-ORS (G-ORS) solutions to treat children with diarrhoea. Families were provided with either G-ORS or R-ORS of the same electrolyte composition through a depot holder. Subsequently, random samples of solutions actually used for treatment by the mothers were collected from homes by field workers. A total of 227 R-ORS and 239 G-ORS samples were analysed. The sodium concentration in about 90% of the samples had a safe range (50-120 mmol/l). Only 4% of R-ORS solutions were above 120 mmol/l in sodium concentration, while 12% of G-ORS solutions exceeded these limits (p < 0.0025). R-ORS (after acid hydrolysis) provided significantly higher glucose (257 +/- 42 mmol/l) for active but safe absorption compared to G-ORS (115 +/- 39 mmol/l). To make R-ORS liquid enough to drink requires addition of sufficient water, preventing the risk of higher sodium concentration. Unlike rice starch, glucose is a highly soluble substance. It is thus possible to prepare a drinkable solution containing dangerously high concentrations of both sodium and glucose, but this can be minimized by more intensive training of the mothers.

Publication Types:
Clinical Trial
Randomized Controlled Trial

PMID: 10943959 [PubMed - indexed for MEDLINE]


Dutta D, Bhattacharya MK, Deb AK, Sarkar D, Chatterjee A, Biswas AB, Chatterjee K, Nair GB, Bhattacharya SK.

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In a randomized controlled clinical trial, the efficacy of a low-sodium low-glucose oral rehydration solution (ORS) and a low-sodium rice-based ORS was compared with standard WHO glucose ORS in the treatment of severe cholera in children aged 2-10y. In total, 120 children were evaluated for the study, of whom 58 patients were positive for Vibrio cholerae and were included in the study. Of these 58 cases, 19 received rice-based hypo-osmolar ORS, 20 received WHO-ORS and 19 received glucose-based hypo-osmolar ORS. The
clinical characteristics (age, preadmission duration of diarrhoea, frequency of stool before admission, incidence of vomiting, body weight and volume of initial fluid requirement) were comparable in the three treatment groups. All patients received tetracycline in a dose of 50 mg/kg/d of body weight in 4 divided doses for 3 d. CONCLUSIONS: Patients who received rice-based hypo-osmolar ORS had subsequently reduced (p < 0.05) stool output, ORS consumption and diarrhoea duration than the patients who received either WHO-ORS or glucose-based hypo-osmolar ORS.

Publication Types:
Clinical Trial
Randomized Controlled Trial

PMID: 10943958 [PubMed - indexed for MEDLINE]

Oral rehydration for infantile diarrhoea: toward a modified solution for the children of the world.

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PMID: 10943951 [PubMed - indexed for MEDLINE]

Rice-based oral rehydration solution for treating diarrhoea.

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BACKGROUND: Oral rehydration therapy is used to treat dehydration caused by diarrhoea. However the rehydration solution does not reduce stool loss or length of illness. A solution able to do this may lessen the use of ineffective diarrhoea treatments as well as improve morbidity and mortality related to diarrhoea. OBJECTIVES: The objective of this review was to assess the effects of rice-based oral rehydration salts solution compared with glucose-based oral rehydration salts solution on reduction of stool output and duration of diarrhoea in patients with acute watery diarrhoea. SEARCH STRATEGY: We searched the Cochrane Infectious Diseases Group trials register, the Cochrane Controlled Trials Register, Medline, Embase, Lilacs and the reference lists of relevant articles. We also contacted researchers in the field. SELECTION CRITERIA: Randomized trials comparing standard World Health Organization oral rehydration solution with an experimental oral rehydration salts solution in which glucose (20 grams per litre) was replaced by 50-80 grams per litre of rice powder, with the electrolytes remaining unchanged. DATA COLLECTION AND ANALYSIS: Data were extracted independently by a statistician and a clinician. MAIN RESULTS: Twenty-two trials were included. Concealment of allocation was adequate in 15 of these trials. Irrespective of age, people with cholera who were given rice oral rehydration salts solution had substantially lower rates of stool loss than those given oral rehydration salts solution in the first 24 hours. Mean stool outputs in the first 24 hours were lower by 67 millilitres/kg of body weight (weighted mean difference -67.4, 95% confidence interval -94.3 to -41.0) in children, and by 51 millilitres/kg of body weight (weighted mean difference -51.1, 95% confidence interval -65.9 to -36.3) in adults. The rate of stool loss in infants and children with acute non-cholera diarrhoea was reduced by only four millilitres/kg of body weight (weighted mean difference -4.3, 95% confidence interval -9.3 to 0.8). REVIEWER’S CONCLUSIONS: Rice-based oral rehydration appears to be effective in reducing stool output in people with cholera. This effect was not apparent in infants and children with non-cholera diarrhoea.

Comment on:

The search for a better oral rehydration solution for cholera.

Rabbani GH.

Gynecol Oncol. 2000 Feb;76(2):170-5.

Induction of apoptosis and growth inhibition of cultured human endometrial adenocarcinoma cells (Sawano) by an antitumor lipoprotein fraction of rice bran.

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OBJECTIVE: A lipoprotein fraction extracted from rice bran (RBF) has been proved to be nontoxic to normal cells and to possess the ability to derange energy metabolism and induce apoptosis in Ehrlich ascites tumor cells. This study is designed to investigate the therapeutic effects of RBF as an antitumor substance on endometrial adenocarcinoma cells (Sawano). METHODS: Cultured human endometrial adenocarcinoma cells were treated with medium only (untreated), DMSO, or RBF at 100, 200, and 300 microg/ml. Mitotic indexes were counted by Giemsa stain and apoptotic index by fluorescent TUNEL stain for confocal laser scanning microscopy. DNA fragments were examined by agarose gel electrophoresis. RESULTS: Characteristic apoptotic morphology was observed in Giemsa-stained cells and further confirmed by confocal laser scanning microscopy in RBF-treated cells. Growth of Sawano cells was inhibited by RBF in a dose- and time-dependent manner. Apoptotic indexes (AI) showed an increasing tendency, and mitotic indexes (MI) showed a downward tendency. In 300 microg/ml RBF-treated Sawano cells, AI even reached 41.62 +/- 2.23% and MI decreased to 0.79 +/- 0.08% at 96 h. Both showed significant differences from to controls and other RBF-treated groups. DNA agarose electrophoresis revealed DNA fragmentation in a ladder pattern. CONCLUSIONS: RBF can induce apoptosis of cultured human endometrial adenocarcinoma cells (Sawano) and inhibit its cell proliferation as an antitumor substance. Copyright 2000 Academic Press.


A 3-hour quantitative comparison of glucose-based versus rice-based oral rehydration solution intake by children with diarrhoea in Port Moresby General Hospital.

Wall C, Todaro W, Edwards K, Cleghorn G.

Children's Nutrition Research Centre, Queensland Institute of Medical
Measurements were made of the intake of a WHO/UNICEF glucose-based and a rice cereal-based oral rehydration solution (ORS) by children with diarrhoea. Twenty children who presented to the Children's Outpatient Department at Port Moresby General Hospital with acute diarrhoea and mild dehydration were randomly assigned to an ORS and measurements were taken over the following 3 hours. For data analysis, the patients were paired by weight. Testing the means of the paired samples by t test showed that there was no significant difference between the amount of rice ORS and the amount of glucose ORS taken over 3 hours.

PIP: The discovery of oral rehydration solution (ORS) for the treatment of diarrheal disease has been heralded as the most important medical discovery of the century. Cereal-based ORS is able to decrease stool output and the duration of diarrheal illness more than the standard glucose-based ORS, through the increased absorption provided by oligosaccharides without the imposition of a greater osmotic penalty. Moreover, the peptides in cereals enhance amino acid and water absorption, while providing nutritional benefits. UNICEF's glucose-based ORS is becoming more widely used in Papua New Guinea (PNG). 20 children aged 6-37 months (mean age, 15 months) who presented to the Children's Outpatient Department at Port Moresby General Hospital during September-October 1993 with acute diarrhea and mild dehydration were randomly assigned to receive either a rice-based ORS or standard glucose ORS, and measurements were taken over the following 3 hours. The patients were paired by weight for analysis. No statistically significant difference was found between the amount of rice ORS and the amount of glucose ORS taken over 3 hours.

Publication Types:
Clinical Trial
Randomized Controlled Trial

PMID: 9522869 [PubMed - indexed for MEDLINE]

Acceptability of a rice-based oral rehydration solution in Port Moresby General Hospital's Children's Outpatient Department.

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The guardians of children brought to the Port Moresby General Hospital's Children's Outpatient Department with a chief complaint of diarrhoeal disease were questioned regarding their preference of glucose-based vs rice-based oral rehydration solution (ORS) in order to determine the acceptability of a rice-based ORS. Of the 93 guardians interviewed, greater than 60% preferred the glucose-based solution in its mixability, appearance and taste, and 65% initially reported that their children preferred the taste of the glucose solution. However, after a 30-minute trial, only 58% of children still preferred the glucose solution. In a country where diarrhoeal disease is a leading cause of child death and guardians are the primary health care providers, the acceptability of an ORS is critical to the morbidity and mortality of Papua New Guinea's children.

PIP: Killing an estimated 2.9 million children annually, diarrheal disease is the second leading cause of child mortality worldwide. Diarrheal disease is also the second leading cause of child mortality in Papua New Guinea (PNG), killing an average 193 inpatient children per year over the period 1984-90. However, despite the high level of diarrhea-related mortality and the proven efficacy of oral rehydration therapy (ORT) in managing diarrhea-related dehydration, standardized ORT has been underutilized in PNG. The current glucose-based oral rehydration solution (ORS) does not reduce the frequency or volume of a
child's diarrhea, the most immediate concern of caregivers during episodes of illness. Cereal-based ORS, made from cereals which are commonly available as food staples in most countries, better address the short-term concerns of caregivers while offering a superior nutritional profile. A sample of guardians of children brought to the Port Moresby General Hospital's Children's Outpatient Department complaining of child diarrhea were asked about their preferences on glucose-based versus rice-based ORS in order to determine the acceptability of a rice-based ORS. More than 60% of the 93 guardians interviewed preferred the glucose-based solution for its mixability, appearance, and taste. 65% initially reported that their children preferred the taste of the glucose solution. However, after a 30-minute trial, only 58% of children still preferred the glucose solution.

PMID: 9522868 [PubMed - indexed for MEDLINE]

Randomized, controlled, clinical trial of rice versus glucose oral rehydration solutions in infants and young children with acute watery diarrhoea.

Faruque AS, Hoque SS, Fuchs GJ, Mahalanabis D.

International Centre for Diarrhoeal Disease Research, Bangladesh, Dhaka.

A randomized clinical trial was carried out to compare a packaged ready-to-mix rice oral rehydration solution (ORS) to the standard glucose ORS for the treatment of childhood diarrhoea. Children were of either gender, aged 3-35 months, presenting with a history of watery diarrhoea for 72 h or less. The main outcomes examined were stool output, ORS intake, duration of diarrhoea and nutritional recovery during follow-up at 16 d of illness. Stool output in the first 24 h (106 vs 107 g kg(-1)), ORS intake in clinic (93 vs 102 ml per motion) and duration of diarrhoea (88 h vs 81 h) were similar in the two treatment groups. The few episodes that became persistent were similar (2%) in the two groups. The weight gain during follow-up was similar in the two ORS groups.

Publication Types:
Clinical Trial
Randomized Controlled Trial

PMID: 9475306 [PubMed - indexed for MEDLINE]

[Decoction of rice as a cure for diarrhea. An old-fashioned treatment in a new light]

[Article in Swedish]

Strandvik B.

Ostra sjukhuset, Goteborg.

PMID: 7564646 [PubMed - indexed for MEDLINE]

The effects of rice bran broth bathing in patients with atopic dermatitis.

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We determined the effects of rice bran broth bathing therapy in 17 outpatients with atopic dermatitis. The rice bran broth used in this study was made in our hospital and distributed to the patients who dissolved it in the bathtub as a medicinal bath. In the case of one patient, redness and itching of the skin
increased just after bathing. The patient subsequently discontinued therapy. We followed the other 16 patients who performed rice bran broth bathing for 2-5 months and examined their skin symptoms once a month. The efficacy of this therapy in alleviating skin symptoms was excellent in four of the 16 evaluated patients, good in seven, slightly effective in four, and ineffective in one. None of the 16 patients experienced negative effects of treatment. Recurrence of initial symptoms was not detected in any patient during rice bran broth bathing. Rice bran broth bathing therapy appears to be safe and clinically useful.

Publication Types:
Clinical Trial

PMID: 1442022 [PubMed - indexed for MEDLINE]

Comment on:

Why is rice water effective for diarrhoea?

[No authors listed]

Publication Types:
Comment
Letter

PMID: 2565465 [PubMed - indexed for MEDLINE]

[Studies on an antitumor polysaccharide RBS derived from rice bran. I. Preparation, physico-chemical properties, and biological activities of RBS]

[Article in Japanese]

Ito E, Takeo S, Kado H, Yamamoto H, Watanabe N, Kamimura M, Soma E, Uchida K, Mori Y, Morinaga T.

PMID: 4009426 [PubMed - indexed for MEDLINE]

Arruda - Ruta graveolens

Effect of Ruta graveolens L. and Euphorbia peplus L. anti-inflammatory extracts on nutritional status of rats and the safety of their use.

Al-Okbi SY, El-Sayed EM, Ammar NM, El-Sayed NK, Abou-El Kassem LT.

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A significant increase in body weight with remarkable increase in total food intake and significant increase in protein efficiency ratio were observed following oral administration of R. graveolens ether extract (500 mg/kg body wt) to growing rats for 3 weeks. Serum albumin was significantly decreased after administration of declofenac (15 mg/kg body wt). Albumin/globulin ratio decreased significantly on administration of E. peplus ether extract (500 mg/kg body wt). No significant changes were observed in other biochemical and nutritional parameters on administration of either of the extracts or declofenac. However, only a significant elevation of alkaline phosphatase was noticed during treatment with R. graveolens. The results suggest that both plant extracts have no harmful effect on nutritional status and are safe towards kidney functions, while Euphorbia is more safe than Ruta in relation to liver
functions.

PMID: 12561967 [PubMed - indexed for MEDLINE]

Antimicrobial activity of some coumarin containing herbal plants growing in Finland.

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Antimicrobial screening against selected Gram-positive and Gram-negative bacteria, yeasts, mold, as well as plant pathogenic fungi, with emphasis on method optimization was carried out on methanol extracts prepared from seven plants grown in Finland. Sensitivity to the extracts was found to vary considerably among the micro-organisms, the extract from Petroselinum crispum and Ruta graveolens showing the highest toxicity against Rhizoctonia solani. The growth of Heterobasidium annosum was inhibited, whereas that of Phytophthora (cactorum) was promoted by all the extracts. The antibacterial and antifungal activities of six natural coumarin compounds were weak, except for the inhibitory effect against Fusarium culmorum.

PMID: 11025169 [PubMed - indexed for MEDLINE]

Traditional antihelmintic, antiparasitic and repellent uses of plants in Central Italy.

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The uses of 51 plants of Marche, Abruzzo and Latium, distributed in 28 families, are listed here. Memories and news of continued use of the plants in these sectors were collected from farmers and shepherds in person (mostly old people). The plants most frequently used as antiparasitics and repellents are Juglans regia, Lupinus albus, Ruta graveolens, Fraxinus ornus, Datura stramonium, Artemisia absinthium, Allium cepa, while R. graveolens, Cucurbita maxima, A. absinthium, Allium sativum are the most commonly used as antihelmintics.

PMID: 10624877 [PubMed - indexed for MEDLINE]

Plants used as abortifacients and emmenagogues by Spanish New Mexicans.

Conway GA, Slocumb JC.

Individuals of Spanish and Mexican descent in New Mexico have used a number of plants as emmenagogues and abortifacients. Of the plants used, cotton root bark (Gossypium sp.), immortal ((Asclepias capricornu Woodson), poleo chino (Hedeoma oblongifolia (Gray) Heller), rue Ruta graveolens L.), wormseed (Chenopodium ambrosioides L.), and three species of Artemesia seem to be used most widely. Of these, the cotton root bark, when used as an abortifacient, seems to exhibit the lowest toxicity. Rue is notable because of its use independently within different cultures, but may exhibit toxic side effects when used as an abortifacient. Seven other plants are outlined on the basis of anecdotal and folkloric reports. Investigations are underway to look at use effectiveness, side effects, impact on fertility, and acceptance among cultures of the Southwestern United States.
PIP: Spanish and Mexican descendants in New Mexico have used plants as emmenagogues and abortifacients to bring on their periods if pregnancy is suspected. The absence of menses in a woman must be treated as a disease because menses is believed to be the removal of bad blood. The most widely used plants are cotton root bark (Gossypium sp.), immortal (Asclepias capricornu Woodson), wormseed (Chenopodium ambrosioides L.), poleo chino (Hedeoma oblongifolia), rue (Ruta graveolens L.), and 3 species of Aremesia. The cotton root bark, when used as an abortifacient, exhibits the lowest toxicity. Rue is used independently within different cultures but may exhibit toxic side effects when used as an abortifacient. The plants are used by 3 principal practitioners: 1) curanderos (healers), who tend to specialize in the care of certain diseases; 2) herbalists, who use many of the materials used in traditional medicine; and 3) brujos, who are sorcerers and witches. Other plants used are osha, chuchupate-lovage; ponso or tanse-tansy; poleo-spearmin or pennyroyal mint; amolillo-wild licorice; dormilon-tall cone flower; malva; and, lanten-plantain. The least toxic abortifacients are species of Gossypium, Ruta, Ligusticum, Asclepias, and Rudbeckia.

PMID: 232204 [PubMed - indexed for MEDLINE]

Ruta graveolens aqueous extract retards mouse preimplantation embryo development.

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This work was undertaken to examine possible embryotoxicity of Ruta graveolens (rue), a plant used by indigenous communities for the purposes of therapeutic and fertility regulation. Superovulated mice were mated and isolated after copulation. They were given aqueous extract of R. graveolens (5, 10, and 20% w/v) or plain water (control) orally for 4 days. Ninety-eight hours post-human chorionic gonadotrophin (hCG), embryos were flushed from oviducts and uterine horns to assess their state of development and extent of embryo transport. Ingestion of rue at 10 and 20% resulted in a high proportion of abnormal embryos (36.7 and 63.6%, respectively, P<0.05). Cell number was diminished (P<0.01) and embryo transport was slightly delayed in the highest dose group. These findings demonstrate that oral administration of R. graveolens extract can interfere with preimplantation development and embryo transport.

PMID: 14613818 [PubMed - in process]

Natural fungicides from Ruta graveolens L. leaves, including a new quinolone alkaloid.

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Bioassay-directed isolation of antifungal compounds from an ethyl acetate extract of Ruta graveolens leaves yielded two furanocoumarins, one quinoline alkaloid, and four quinolone alkaloids, including a novel compound, 1-methyl-2-[6′-(3′′,4′′-methylenedioxyphenyl)hexyl]-4-quinolone. The (1)H and (13)C NMR assignments of the new compound are reported. Antifungal activities of the isolated compounds, together with 7-hydroxy coumarin, 4-hydroxy coumarin, and 7-methoxy coumarin, which are known to occur in Rutaceae species, were...
evaluated by bioautography and microbioassay. Four of the alkaloids had moderate activity against Colletotrichum species, including a benomyl-resistant C. acutatum. These compounds and the furanocoumarins 5- and 8-methoxypsoralen had moderate activity against Fusarium oxysporum. The novel quinolone alkaloid was highly active against Botrytis cinerea. Phomopsis species were much more sensitive to most of the compounds, with P. viticola being highly sensitive to all of the compounds.

PMID: 12568545 [PubMed - indexed for MEDLINE]

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Artemia salina L. (Artemiidae), the brine shrimp larva, is an invertebrate used in the alternative test to determine toxicity of chemical and natural products. In this study the Medium Lethal Concentrations (LC50 value) of 20 plant extracts, Aloe vera (L.) Burm. F. (Aloeaceae), Artemisia absinthium L. (Asteraceae); Citrus aurantium L. (Rutaceae); Cymbopogon citratus (DC. Ex Nees) Stapf (Poaceae); Datura stramonium L. (Solanaceae); Justicia pectoralis Jacq. (Acanthaceae); Musa x paradisiaca L. (Musaceae); Ocimum basilicum L.; O. gratissimum L.; O. tenuiflorum L. (Lamiaceae); Pimenta dioica (L.) Merr. (Myrtaceae); Piper auritum Kunth (Piperaceae); Plantago major L. (Plantaginaceae); Plectranthus amboinicus (Lour.) Spreng. (Lamiaceae); Ruta graveolens L. (Rutaceae); Senna alata (L.) Roxb. (Fabaceae); Stachytarpheta jamaicensis (L.) Vahl (Verbenaceae); and Thuja occidentalis L. (Cupressaceae), were determined using Artemia salina L. (Artemiidae), with the objective of relating the results to the LD50 values reported in mice (tested at three concentrations: 10, 100, and 1000 microg/mL, for each extract). We found good correlation between the in vivo and the in vitro tests (r = 0.85 p < 0.05), and this method is a useful tool for predicting oral acute toxicity in plant extracts.

PMID: 11695884 [PubMed - indexed for MEDLINE]

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An EtOH extract of the dried aerial parts of Ruta graveolens was suspended in water and then partitioned with EtOAc. Three new glycosides, 3'-sinapoyl-6-feruloylsucrose (4), methylcnidioside A (5), and methylpicraquassioside A (6), together with four known glycosides, 3',6-disinapoylsucrose (1), cnidioside A (2), rutin, and picraquassioside A (3), were isolated from the water-soluble part. Their structures were elucidated by interpretation of IR, MS, and 1D and 2D NMR spectra and comparison with literature data.

PMID: 11473445 [PubMed - indexed for MEDLINE]
It is very important to search for natural compounds possessing nerve growth factor (NGF)-potentiating activity. Extracts of 7 Chinese and 10 Paraguayan medicinal plants were examined for their effects on the NGF-mediated neurite outgrowth from PC12D cells to evaluate their NGF-potentiating activities. In the methanol extracts, Gymnopteris rufa (LINN.) BERNH, Ruta graveolens LINN. and Picrorhiza scrophulariiflora PENNELL markedly increased the proportion of neurite-bearing cells. In the case of ethyl acetate fractions, Equisetum giganteum LINN. produced the most powerful enhancement of the proportion of the neurite-bearing cells, and the activities were in the following decreasing order: Equisetum giganteum LINN., Gymnopteris rufa (LINN.) BERNH, Ruta graveolens LINN., and Picrorhiza scrophulariiflora PENNELL. In the water fractions, Imperata cylindrica, Ginseng Radix, Gymnopteris rufa (LINN.) BERNH, Gochnatia polymorpha (LESS) CAB and Picrorhiza scrophulariiflora PENNELL caused a weak enhancement of the proportion of PC12D cells with neurites. Of all the extracts and fractions, the methanol extract of Picrorhiza scrophulariiflora PENNELL induced the longest neurites in PC12D cells. In the ethyl acetate and water fractions of Nardostachys chinensis, long neurites were observed although only a small proportion of PC12D cells had neurites. On the other hand, in the ethyl acetate fraction of Equisetum giganteum LINN., while the length of the neurites was short, the proportion of neurite-bearing cells was largest among all the extracts and fractions.

PMID: 10443479 [PubMed - indexed for MEDLINE]

Anti-nociceptive and anti-inflammatory effects of some Jordanian medicinal plant extracts.

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The anti-nociceptive effect of ethanolic extract of 11 traditionally used Jordanian plants was studied by using the acetic acid-induced writhing and hot-plate test in mice. The anti-inflammatory effect of these plants was determined by xylene-induced ear oedema in mice and cotton pellet granuloma test in rats. Mentha piperita, Cinnamomum zeylanicum, Apium graveolens, Eucalyptus camaldulensis, and Ruta graveolens possess an anti-nociceptive effect against both acetic acid-induced writhing and hot plate-induced thermal stimulation. M. piperita, Jasminum officinale, Commiphora molmol, and Beta vulgaris possess an anti-inflammatory effect against acute (xylene-induced ear oedema) and chronic (cotton-pellet granuloma) inflammation. The anti-nociceptive and anti-inflammatory effects were dose dependent. These data affirm the traditional use of some of these plants for painful and inflammatory conditions.

PMID: 9582001 [PubMed - indexed for MEDLINE]

In vitro cytotoxic effect of some medicinal plants containing flavonoids.

Trovato A, Monforte MT, Rossitto A, Forestieri AM.

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Aqueous, ethanolic and petroleum ether extracts of Citrus sinensis L. (Osbeck), Euphrasia officinalis L., Glycyrrhiza glabra L., Matricaria recutita L., Rosa
canina L. and Ruta graveolens L. have been studied. The cytotoxicity of the

drugs assayed was evaluated "in vitro" by means of the dye test using cells of

the Yoshida ascites sarcoma. The aqueous extract of Citrus sinensis L.

(Osbeck); the petroleum ether extract of Glycyrrhiza glabra L.; the ethanolic

and petroleum ether extracts of Rosa canina L. and the petroleum ether extract

of Ruta graveolens L. showed a quite significative cytotoxic effect.

PMID: 8913055 [PubMed - indexed for MEDLINE]


Post-coital antifertility action of Ruta graveolens in female rats and hamsters.

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Different preparations of Ruta graveolens were administered orally to female

rats (Days 1-10 post coition) and female hamsters (Days 1-6 post coition). The

powdered root (CDR), aerial parts (CDA) and the aerial parts aqueous extract

(AEA) all showed potential anticonceptive activity in rats. Limited administration

on selected days of CDA showed uniformly lesser activity than with 10-day

treatment. Sequentially prepared petroleum ether and methanol extracts of

CDA were as active as CDA itself. The benzene and chloroform extracts were

toxic and inactive. Rutin, a known chemical constituent of the plant, was found

to be inactive. None of the above preparations showed activity in hamsters.

PMID: 1753787 [PubMed - indexed for MEDLINE]


Effects of some potassium channel blockers on the ionic currents in myelinated

nerve.

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The effects of some potassium channel blockers on the ionic currents and on

the so-called K(+)-depolarization in intact myelinated nerve fibres were studied.

4-AP, and in particular, Flaxedil, proved to be selective K(+)-current blockers.

However, TEA, a crown ether (DCH18C6), a longchained triethylammonium

compound (C10-TriEA), capsaicin, and the extract from the medicinal herb Ruta

graveolens proved not to be selective K(+)-current blockers; they all block

Na(+)-currents as well, although to a lesser extent. The sodium inactivation

curve did not change under TEA and Flaxedil but was shifted on the potential

axis in negative direction by DCH18C6, 4-AP, capsaicin and the Ruta extract

whereas C10-TriEA caused a shift of both sodium inactivation and activation

parameters in positive direction. Regarding to the kinetics of the persisting

K(+)-current fraction, two different kinds of blockade were found: 1. Unchanged

K(+)-kinetic which is typical for the effects of TEA, 4-AP, Flaxedil, and

C10-TriEA. 2. Clearly changed K(+)-kinetic, characterized by K(+)-transients;

which is typical for the effects of capsaicin and in particular, for those of

DCH18C6 and of the Ruta extract. The possibly different modes of action of

both groups of blockers are discussed in terms of current models for the action

of potassium channel blockers.

PMID: 1916219 [PubMed - indexed for MEDLINE]


Mutagenic compounds in an extract from Rutae Herba (Ruta graveolens L.). II.

UV-A mediated mutagenicity in the green alga Chlamydomonas reinhardtii by

furoquinoine alkaloids and furocoumarins present in a commercial tincture from

Rutae Herba.
A commercial tincture prepared from Rutae Herba (Ruta graveolens L.) exhibited a moderate photomutagenicity in an arginine-requiring mutant strain of Chlamydomonas reinhardtii. In the tincture some furcocoumarins, e.g., bergapten, psoralen, imperatorin, and 3 furoquinoline alkaloids (dictamnine, gamma-fagarine, skimmianine) were detected. All compounds revealed photomutagenic properties but their activities were quite different. Bergapten was the most potent furocoumarin. Dictamnine, the furoquinoline with the strongest effect, reached only about 10% of the activity of bergapten. Based on the amount of these compounds in the tincture and their activities we conclude that bergapten is mainly responsible for the photomutagenicity of the tincture. The lower phototoxicity and photomutagenicity of the furoquinoline alkaloids may be due to the fact that furoquinolines form only monoadducts with DNA in the presence of UV-A in contrast to furcocoumarins which also form biadducts.

PMID: 2300085 [PubMed - indexed for MEDLINE]

Mutagenic compounds in an extract from rutae herba (Ruta graveolens L.). I. Mutagenicity is partially caused by furoquinoline alkaloids.

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Mutagenicity testing of a commercial extract from Rutae Herba (Tinctura Rutae) revealed a strong effect in Salmonella typhimurium strain TA98 without S9 mix. In the presence of S9 mix only a weak response was observed. Moderate mutagenic effects were detected with and without S9 mix using strain TA100. The extract used contained the furoquinoline alkaloids dictamnine, gamma-fagarine, skimmianine, pteleine and kokusaginine, as indicated by g.c. and g.c.-m.s. analysis. The pure compounds exhibited a mutagenic activity only in the presence of S9 mix in strain TA98 as well as in strain TA100, but their specific mutagenicity differed greatly in strain TA98. We conclude that the extract studied contains different mutagenic activities and that these are only partially due to the furoquinolines present in the extract.

PMID: 3325757 [PubMed - indexed for MEDLINE]

Anti-implantation activity of some indigenous plants in rats.

Prakash AO, Saxena V, Shukla S, Tewari RK, Mathur S, Gupta A, Sharma S, Mathur R.

Various extracts of one hundred and eight medicinal plants were screened for their anti-implantation activity in female albino rats. Out of these, 50% ethanolic extract of Codonopsis ovata Benth (PL); 50% ethanolic, acetone and benzene extracts of Puararia tuberosa DC (TUB); aqueous and methanolic extracts of Punica granatum Linn. (PX) and ethanolic and acetone extracts of Rubus ellipticus Smith (PX) inhibited pregnancy in 70-90% of rats. Similarly ethanolic extract of Adhatoda vasica Nees (LF) and Kigelia pinnata DC (PL); ethanolic and acetone extracts of Acrostichum aureum Linn. (PL), Juniperus communis Linn. (SD), Lepidium capitatum H.f. & T. (PL); ethanolic and benzene extracts of Citrus colocynthus Schrad (LF) and acetone extract of Codonopsis ovata Benth (PL) showed 60-70% anti-implantation activity. Extracts of a few plants
VIZ. Dolichos biflorus Linn. (SD), Ferule orientalis Linn. (PL), Nerium odoratum Lamk (RT), Randia dumetorum Lamk (SD) and Ruta graveolens Linn. (PL) could inhibit pregnancy in 50-60% of rats. The rest of the plants were either inactive or showed insignificant antifertility activity.

PMID: 3832714 [PubMed - indexed for MEDLINE]

Artemisia - Artemisia vulgaris

[Experimental studies of antitumor effect of artesunate on liver cancer]
[Article in Chinese]

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OBJECTIVE: To observe the inhibiting effect of Artesunate on liver cancer in vitro and in vivo. METHOD: The mice bearing H22 solid and ascitic liver tumor were applied in vivo experiments. Microculture tetrazolium assay and colony-forming unit assay were applied to test the cytotoxicity to human hepatocarcinoma SMMC-7721 cell line in vitro. RESULT: The growth of solid tumor were obviously inhibited by Artesunate at the dose of 300 mg.kg-1.d-1 ig for 7 days. The tumor inhibiting rates of Artesunate were 49.1%, 48.7%, 46.6% in 3 experiments respectively. After administration of Artesunate, the survival rate of the mice bearing H22 ascitic liver tumor were increased to 45%. Compared with the control groups, the difference was statistically significant (P < 0.01). In additional, Artesunate can synergize the antitumor activity of 5-fluorouracil. Artesunate showed evident cytotoxicity to human hepatocarcinoma SMMC-7721 cells, the IC50 of Artesunate being 2.07 micrograms.ml-1 in MTT experiment and 2.48 micrograms.ml-1 in colony-forming unit experiment. CONCLUSION: Artesunate has marked antitumor activity in vitro and in vivo.

PMID: 12776323 [PubMed - indexed for MEDLINE]

Comment on:

Artemesinins for severe malaria in Africa?

Marsh K.

Publication Types:
Comment
Editorial
Review
Review, Tutorial

PMID: 12678444 [PubMed - indexed for MEDLINE]

A comparison of three different dihydroartemisinin formulations for the treatment of acute uncomplicated falciparum malaria in Thailand.


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We compared the safety and efficacy of three formulations of dihydroartemisinin for the treatment of acute uncomplicated falciparum malaria in patients who received a total dose of 600 mg dihydroartemisinin over 5 days. The first group was treated by dihydroartemisinin produced and formulated in the People's Republic of China, the second group was treated by dihydroartemisinin produced in Vietnam but formulated by the Government Pharmaceutical Organization of Thailand and the third group was treated by dihydroartemisinin produced and formulated by the Government Pharmaceutical Organization of Thailand. All patients were admitted to hospital to evaluate safety and efficacy for a total of 28 days. By the third day of treatment, most patients were blood-smear negative for parasites and none had serious adverse effects. Minor symptoms such as nausea, dizziness and headache were similar in the three groups and disappeared after 3 days of treatment. One-hundred and thirty-three patients completed the 28-day follow-up period. The cure rates of groups I, II and III were 80%, 85% and 92%, respectively (P > 0.02). There were no significant differences in fever clearance or parasite clearance among the three groups. We conclude that the three formulations of dihydroartemisinin produced and formulated in different countries were safe and effective in treating uncomplicated falciparum malaria acquired in Thailand.

PMID: 9762567 [PubMed - indexed for MEDLINE]

The role of plant-derived drugs and herbal medicines in healthcare.

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Many of our present medicines are derived directly or indirectly from higher plants. While several classic plant drugs have lost much ground to synthetic competitors, others have gained a new investigational or therapeutical status in recent years. In addition, a number of novel plant-derived substances have entered into Western drug markets. Clinical plant-based research has made particularly rewarding progress in the important fields of anticancer (e.g. taxoids and camptothecins) and antimalarial (e.g. artemisinin compounds) therapies. In addition to purified plant-derived drugs, there is an enormous market for crude herbal medicines. Natural product research can often be guided by ethnopharmacological knowledge, and it can make substantial contributions to drug innovation by providing novel chemical structures and/or mechanisms of action. In the end, however, both plant-derived drugs and crude herbal medicines have to take the same pharmacoeconomic hurdle that has become important for new synthetic pharmaceuticals.

Publication Types:
Review
Review, Academic

PMID: 9421691 [PubMed - indexed for MEDLINE]

Anaphylaxis induced by ingestion of a pollen compound.

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We report on the case of a 32-year-old atopic patient who showed a severe anaphylactic reaction due to the ingestion of a pollen compound prepared in an herbalist's. A few minutes after ingestion, generalized pruritus, diffuse erythema,
facial edema, cough, hoarseness and dysphonia appeared, and the emergency administration of subcutaneous epinephrine and intravenous methylprednisolone was necessary. Skin tests with a battery of inhalants and food allergens were performed. The patient only showed sensitization to Artemisia vulgaris, Taraxacum officinalis and Salix alba. Specific IgE levels were evaluated by FEIA-CAP giving a seric level of CAP class 3 to Artemisia vulgaris and class 2 to Taraxacum officinalis and Salix alba. Samples of the pollen compound were shown in the microscopical analysis to be 93% pollens and 6% fungi. In the qualitative study Taraxacum officinalis (15%), Artemisia vulgaris (5%) and Salix alba (15%) were the main elements identified. In summary, this case study describes a food-induced systemic reaction due to a pollen compound in an atopic patient with a history of allergic rhinitis. Pollinic patients must be informed on the risks that the consumption of these compounds might cause.

Publication Types:
Case Reports

PMID: 8807513 [PubMed - indexed for MEDLINE]

The influence of a residual group in low-molecular-weight allergoids of Artemisia vulgaris pollen on their allergenicity, IgE- and IgG-binding properties.


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BACKGROUND: Reaction of epsilon-amino groups of lysine with potassium cyanate, maleic, or succinic anhydride leads to allergoids of low molecular weight. No study has been performed to compare their properties and investigate the influence of a residual group on allergenicity and human IgE- and IgG-binding of these derivatives. METHODS: Allergoids of a pollen extract of Artemisia vulgaris were obtained by means of potassium cyanate, and succinic and maleic anhydride. Biochemical properties were investigated by determination of amino groups, enzyme activity, isoelectric focusing IEF and SDS-PAGE. IgE- and IgG-binding was determined using immunoblots and ELISA inhibition. Allergenicity was investigated by skin prick tests (SPT) on a group of 52 patients, of which 6 were control subjects, 30 were patients with no previous immunotherapy (IT), and 16 were patients undergoing immunotherapy. RESULTS: The same degree of amino-group modification (more than 85%), residual enzyme activity (less than 15%), IEF, and SDS-PAGE pattern were noted. In the immunoblots of IgE-binding, there was more pronounced reduction in the succinyl and maleyl derivatives than in the carbamyl one. IgG-binding was less affected by carbamylation than by acid anhydride modification. The SPT showed that the succinylated derivative had the most reduced allergenicity (98% showed a reduced wheal diameter when tested with the succinyl derivative, 87% with the maleyl allergoid, and 83% with the carbamyl allergoid). The most significant difference among allergoids could be seen in the group of patients with high skin reactivity (83% of patients showed no reaction to the succinyl derivative when compared to the value of 28% for the carbamyl derivative or 22% for the maleyl derivative). CONCLUSIONS: According to our results, all three modification procedures yielded allergoids with a similar extent of modification. No single biochemical parameter investigated in the study could predict the degree of reduced allergenicity in vivo. The most reduced allergenicity was seen in the succinyl derivative while the preservation of IgG binding epitopes was of the highest degree for the carbamyl derivative.

PMID: 12358997 [PubMed - indexed for MEDLINE]

Clinical cross-reactivity between Artemisia vulgaris and Matricaria chamomilla (chamomile).

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Artemisia vulgaris is a common weed and an important source of allergens on the subtropical island of Tenerife, Canary Islands, Spain. It pollinates mainly from July to September, although, due to some local climatic conditions, it may flower throughout the year. Cross-reactivity with hazelnut, kiwi, birch, several Compositae (Ambrosia, Chrysanthemum, Matricaria, Solidago) and grass allergens has been suggested. Few studies have addressed the issue of in vivo cross-reactivity between A. vulgaris and Matricaria chamomilla. The objective of this study was to perform conjunctival and bronchial challenges with A. vulgaris and M. chamomilla and oral challenge with chamomile in 24 patients with asthma and/or rhinitis sensitized primarily to A. vulgaris. Skin prick tests with M. chamomilla were positive in 21 patients. Eighteen patients had a positive conjunctival provocation test with a A. vulgaris pollen extract and 13 patients had a positive conjunctival provocation test with a M. chamomilla pollen extract. Bronchial provocation tests with A. vulgaris were positive in 15 patients and with M. chamomilla pollen in another 16 individuals. Oral provocation tests, conducted with a commercial chamomile infusion were positive in 13 patients. Nine of these individuals were skin test positive to food allergens and 17 to others pollens of the Compositae family. This study confirms a high degree of in vivo cross-reactivity between A. vulgaris and Matricaria chamomilla. Sensitization to A. vulgaris seems to be a primary risk factor for experiencing symptoms after the ingestion of chamomile infusions. Based on the results of bronchial provocation tests, M. chamomilla pollen could be a relevant inhalant allergen.

PMID: 11642570 [PubMed - indexed for MEDLINE]


Phytochemical analysis and hemodynamic actions of Artemisia vulgaris L.

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Artemisia vulgaris L. is widely used in the Philippines for its anti-inflammatory properties. The plant was cultivated and mature leaves were collected and washed. The dried leaves were extracted with both distilled water and chloroform. NMR data were obtained using a Varian Unity 500 MHz spectrophotometer. High and low-resolution mass spectra were obtained on a Finnigan MAT 96 high resolution gas chromatograph/mass spectrophotometer with a MAT ICIS operating system. The leaves yielded 2 sesquiterpene lactones and a novel aromatic compound. Two partition fractions from the aqueous extracts and four partition fractions from the chloroform extracts were tested on male Sprague-Dawley rats using both the in situ mesenteric circulation and the isolated perfused mesentery. In the isolated perfused rat mesentery, administration of 10% w/v solutions of water extract fractions FGN 63-1 and FGN 63-2 of A. vulgaris were highly effective in reversing the hypertensive action induced by norepinephrine, but they did not change the regional mesenteric pressures when given at baseline. In the intact rat, injection of 10 mg/ml of FGN 63-1 and chloroform extract FGN 64-2 did not significantly alter baseline blood pressures, but were able to reverse the increase in mean systolic and diastolic pressures induced by norepinephrine. The same fractions did not exert any significant effect on heart rate in either the normotensive or hypertensive states. The present data suggest that aqueous and chloroform extracts from leaves of A. vulgaris have anti-hypertensive actions but have no
significant effects on cardiovascular hemodynamics under basal conditions.

PMID: 11321437 [PubMed - indexed for MEDLINE]

In vivo microvascular actions of Artemisia vulgaris L. in a model of ischemia-reperfusion injury in the rat intestinal mesentery.

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Water extract fractions of leaves from Artemisia vulgaris L. (commonly known as mugwort) were tested for their effects on tissue damage brought about by ischemia-reperfusion injury in the rat mesentery. Male Sprague-Dawley rats, 200-300 grams in weight were divided into two groups, control and treatment (AV) group. All rats were anesthetized with ketamine HCl administered intramuscularly, tracheotomized and cannulated in one carotid artery and one jugular vein. After a midline abdominal incision, the mesenteric area was exteriorized and observed using videomicroscopy. After baseline observations of systemic blood pressure, heart rate, venular diameters and leukocyte adhesion along venules, the mesenteric artery and vein were occluded for 10 minutes. Prior to occlusion, A. vulgaris-treated animals were given a bolus injection of a 1% w/v solution of extracts, while the control group received saline. Monastral Blue dye was also administered before the occlusion at a dose of 30 mg/kg via the jugular vein in order to assess transendothelial leakage. Hemodynamic and cellular parameters were measured immediately after the release of occlusion and at 10 minute intervals thereafter. Results show that the extracts had no significant effects on mean blood pressures and heart rates, but appeared to significantly reduce leukocyte adherence and transendothelial leakage while improving flow in the ischemia-reperfused organ. The extract fractions contain yomogin, which has been previously shown to inhibit iNOS activity, and may therefore explain the anti-inflammatory property of the plant.

PMID: 11321436 [PubMed - indexed for MEDLINE]

Tobacco allergy: demonstration of cross-reactivity with other members of Solanaceae family and mugwort pollen.


Department of Allergy, Hospital Universitario NTRA SRA del Pino, Las Palmas de Gran Canaria, Canary Islands, Spain.

BACKGROUND: Tobacco is a plant belonging to the Solanaceae family. This plant is usually used as a contact insecticide for several infestations in some areas, such as the Canary Islands. Allergy induced by inhalation of this plant is unusual. Identification of the potential allergen in growing areas is essential. OBJECTIVE: We report a patient with occupational sensitivity to an aqueous solution of cut tobacco whose clinical manifestations were rhinoconjunctivitis and urticaria. Past medical history was significant for seasonal allergic rhinoconjunctivitis to mugwort pollen and oral allergy syndrome with avocado. METHODS: Green tobacco and cured tobacco leaf extracts were prepared, skin prick tests were performed with green tobacco, cured tobacco leaf extracts, and certain aeroallergens. Conjunctival challenge test was carried out with green tobacco and cured tobacco leaf extract. Serum-specific IgE against tobacco leaf was performed by commercial CAP. CAP inhibition experiments were carried out with tobacco and Artemisia vulgaris. RESULTS: Skin prick tests and conjunctival challenge tests with green tobacco and cured tobacco leaf extracts were positive, as well as serum-specific IgE by CAP, indicating an
IgE-mediated sensitization. CAP inhibition experiments were carried out and it
was found that tobacco, mugwort pollen, and tomato extracts inhibited the
binding of the patient's serum to solid-phase tobacco leaf. No inhibition was
observed when Alternaria, D. pteronyssinus, and potato were used as control
inhibitors. Inhibition of immunoCAP to mugwort was obtained with mugwort and
tobacco extracts and no cross-reactivity to D. pteronyssinus was shown.
CONCLUSION: The results suggest that tobacco can induce IgE-mediated
reactions that are mediated by the existence of common antigenic epitopes
between tobacco and mugwort pollen. This allergy can be a hazard of
employment in the agricultural areas.

Publication Types:
Case Reports

PMID: 10071524 [PubMed - indexed for MEDLINE]
Kiwi allergens and their cross-reactivity with birch, rye, timothy, and mugwort
pollen.

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In order to study kiwi allergens and examine their cross-reactivity to birch, rye,
timothy, and mugwort pollen, immunoblot and enzyme immunoassay (EIA)
inhibition tests were performed with self-prepared kiwi extract. For the
investigations, the sera of 22 kiwi-allergic patients were used, which were
characterized by radioallergosorbent (RAST) measurements for kiwi, birch
pollen, and apple with commercial allergen disks. The RAST values for kiwi
were compared with those obtained by self-prepared kiwi extract disks. In the
RAST, the allergen potency of this extract was found to be very similar to that
of the commercial extracts. This extract was able to bind immunoglobulin E
from kiwi-allergic patients in the immunoblots and EIA. Immunoblot results
revealed a broad spectrum of IgE specificities; 12 allergens were identified
within the range of 15 to 94 kDa, 10 of which cross-reacted with birch, timothy,
rye, and mugwort pollen, while two (25 and 30 kDa) were not inhibited
homologously or by pollen. EIA inhibition additionally revealed kiwi-specific
allergens. Three proteins of the kiwi extract (25, 30 and 43 kDa) were
considered to contain a carbohydrate moiety. Profilin seems to be relevant in
cross-reactivity of kiwi allergens.

PMID: 9615299 [PubMed - indexed for MEDLINE]
Identification of common allergenic structures in mugwort and ragweed pollen.

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Austria.

Identification of common allergenic structures in mugwort and ragweed pollen.
BACKGROUND: Despite the rare occurrence of ragweed in Middle Europe, a
surprisingly high number of patients allergic to mugwort, a frequently
encountered weed, display IgE reactivity against ragweed pollen allergens.
OBJECTIVE: The aim of this study was to investigate whether the high
prevalence of IgE reactivity against ragweed in patients allergic to mugwort is
caused by the presence of common allergenic determinants. We also sought to
classify any cross-reactive allergens. METHODS: Common allergenic
structures in mugwort and ragweed pollen were characterized by qualitative
IgE immunoblot inhibition experiments performed with natural allergen extracts.
and recombinant allergens. The degree of cross-reactivity was estimated by quantitative CAP-FEIA competitions. The clinical significance of cross-reactive IgE antibodies was studied with histamine release experiments and nasal provocation tests. RESULTS: Mugwort and ragweed RAST values were significantly correlated in a population of 82 Austrian patients allergic to mugwort. IgE antibodies cross-reacted with allergens of comparable molecular weight that were present in both extracts. By using recombinant birch profilin and specific antisera for IgE inhibition experiments, profilin was identified as one of the cross-reactive components in mugwort and ragweed pollen. Preincubation of sera from patients allergic to mugwort with mugwort extract inhibited IgE binding to ragweed pollen extract greater than 80%. Mugwort and ragweed pollen extract induced comparable histamine release and reduction of nasal air flow in a patient with IgE reactivity against the major mugwort allergen Art v 1. CONCLUSION: In addition to profilin, mugwort and ragweed pollen contain a number of cross-reactive allergens, among them the major mugwort allergen Art v 1. Cross-reactive IgE antibodies can lead to clinically significant allergic reactions.

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Assa-Peixe - Bohemeria Caudata

Avenca - Adiantum capillus-veneris

Fern constituents: triterpenoids from Adiantum capillus-veneris.


Showa Pharmaceutical University, Machida, Tokyo, Japan.

Two new migrated hopane triterpenoids, viz. 4alpha-hydroxyfilican-3-one and fern-9(11)-en-12beta-ol, and olean-18-en-3-one and olean-12-en-3-one as the first example of oleanane compounds from Adiantum ferns were isolated along with many other known triterpenoids from Adiantum capillus-veneris of China and Egypt. Their structures were elucidated by spectroscopic analyses.

PMID: 12237552 [PubMed - indexed for MEDLINE]

[Phytochemical investigation of Adiantum capillus veneris]
[Article in Italian]

Marino A, Elberti MG, Cataldo A.

The sterol fraction of Adiantum capillus veneris contains beta-sito sterol, stigmasterol and capesterol identified by means of spectral data (1H-NMR and MS).

PMID: 2775551 [PubMed - indexed for MEDLINE]

Structure and stereochemistry of a triterpenoid expoxide from Adiantum capillus-Veneris.

Berti G, Bottari F, Marsili A.

PMID: 5802374 [PubMed - indexed for MEDLINE]