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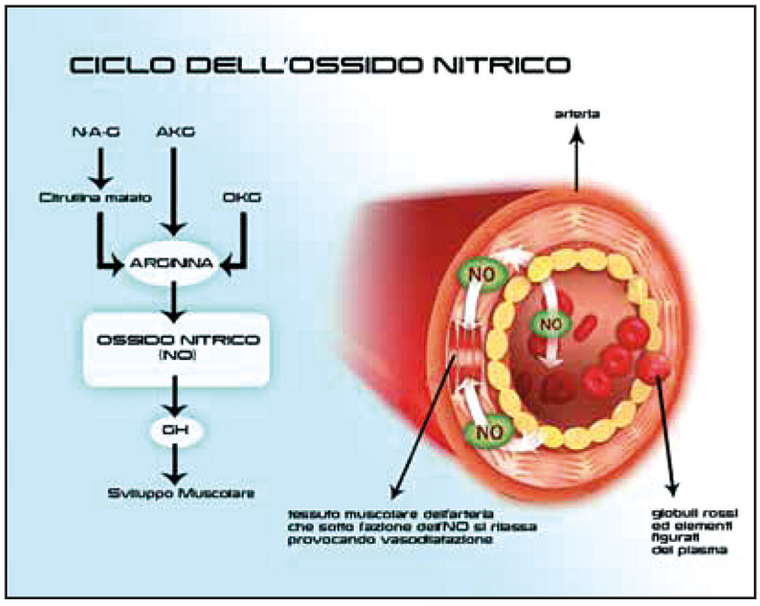
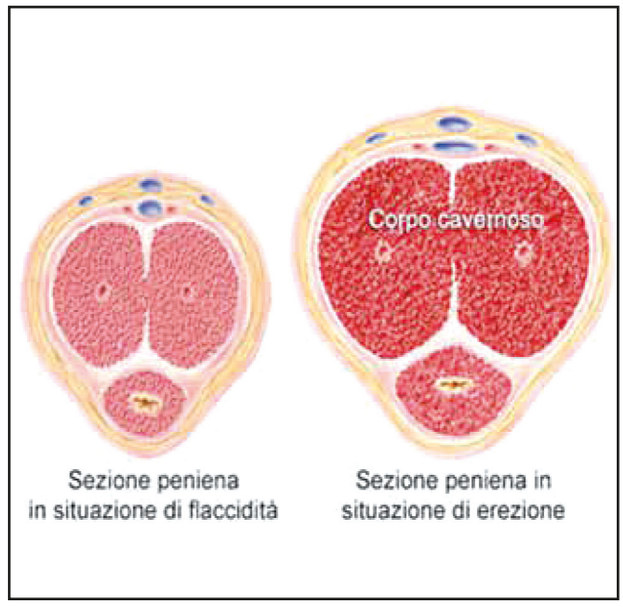
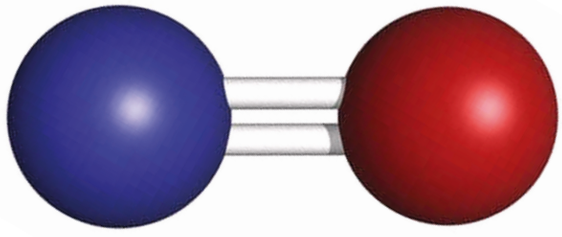




OSSIDO NITRICO



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Maggiore sintesi di ossido nitrico grazie all'azione combinata di più principi attivi

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> Ginsenosidi ad alta concentrazione (bacche del ginseng rosso coreano)
> Cornus offcinalis

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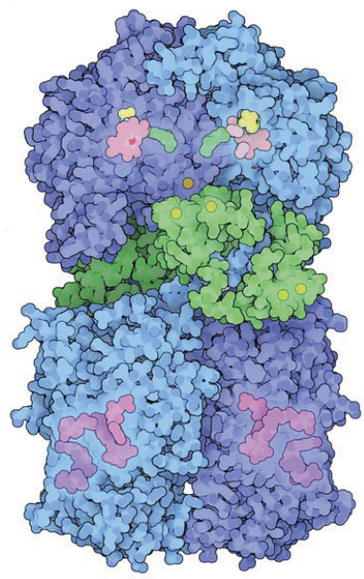
> Viscum album
> Estratto corteccia pino marittimo
> Quercetina



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> Azione di controllo sulla funzione eiaculatoria

> L'azione si esplica attaverso i ginsenosidi

> Le bacche contengono una concentrazione maggiore di ginsenosidi rispetto alla corteccia normalmente utilizzata

> Azione elettiva nel paziente obeso e nel diabetico

INTEGRATORE ALIMENTARE CON EDULCORANTE

Asian Journal of Andrology (2013) 15, 503–507

www.nature.com/aja

ORIGINAL ARTICLE

Effects of Korean ginseng berry extract (GB0710) on penile erection: evidence from *in vitro* and *in vivo* studies

Kang Su Cho[1], Chan Woong Park[2], Chun-Ki Kim[3], Hee Young Jeon[2], Wan Gi Kim[2], Sang Jun Lee[2], Young-Myeong Kim[3], Joo Yong Lee[1] and Young Deuk Choi[1,4]

Several reports have promoted the root-derived Korean red ginseng (KRG; Panax ginseng) as alternative treatment for erectile dysfunction (ED), and ginsenosides are known to be the principal active ingredients of ginseng. Recent studies showed that ginseng berries produce more ginsenosides than KRG; thus, we investigated the ability of the Korean ginseng berry extract GB0710 to relax the penile corpus cavernosum smooth muscle (CCSM) in this study. As a comparative control, the results were compared to those obtained using KRG. In addition, possible mechanisms of action for GB0710 were investigated. While KRG and GB0710 both displayed dose-dependent relaxation effects on precontracted rabbit CCSM *in vitro*, GB0710 was shown to be more potent than KRG. The GB0710-induced relaxation could be partially reduced by removing the endothelium. In addition, pre-treatment with several nitric oxide (NO) inhibitors significantly inhibited the relaxation of muscle strips. Furthermore, administration of GB0710 increased intracavernosal pressure (ICP) in a rat *in vivo* model in both a dose- and duration-dependent manner. Intracellular NO production in human microvascular endothelial cells could be induced by GB0710 and inhibited by N^G-monomethyl-*L*-arginine. In conclusion, GB0710 had a greater relaxation effect on rabbit CCSM than did KRG extract, and increased ICP in a rat model in both a dose- and a duration-dependent manner. This relaxing effect might be mediated by NO production.
Asian Journal of Andrology (2013) **15,** 503–507; doi:10.1038/aja.2013.49; published online 27 May 2013

Int J Impot Res. 2013 Mar-Apr;25(2):45-50. doi: 10.1038/ijir.2012.45. Epub 2012 Dec 20.

Effects of Korean ginseng berry extract on sexual function in men with erectile dysfunction: a multicenter, placebo-controlled, double-blind clinical study.

Choi YD[1], Park CW, Jang J, Kim SH, Jeon HY, Kim WG, Lee SJ, Chung WS.

⊕ Author information

Abstract

Ginseng is beneficial for many aspects of human physiology, including sexual function. In this study, we have evaluated the efficacy and safety of an extract of ginseng berry, which has a ginsenoside profile distinct from other parts of the plant, on sexual function in men with erectile dysfunction. In all, 119 men with mild-to-moderate ED participated in a multicenter, randomized, double-blind, parallel, placebo-controlled clinical study. They were administered 4 tablets of either standardized Korean ginseng berry (SKGB, 350 mg ginseng berry extract per tablet), or placebo, daily, for 8 weeks. Efficacy was assessed with the International Index of Erectile Function (IIEF)-15 and premature ejaculation diagnostic tool (PEDT) at the end of the 4th and 8th week. We observed that the total and each of the individual domain scores of IIEF-15 increased from 40.95 ± 7.05 to 46.19 ± 12.69 significantly in the SKGB by the 8th week ($P<0.05$). The erectile function domain of IIEF changed slightly from 17.17 ± 2.57 to 18.59 ± 5.99 in the SKGB group by the 8th week ($P<0.05$). In addition, PEDT scores significantly improved from 9.14 ± 4.57 to 7.97 ± 4.4 and 7.53 ± 4.26 in the SKGB group after 4 and 8 weeks of treatment ($P<0.05$). Safety markers including hormone and lipid in the blood were assessed at the end of the 4th and 8th week and they remained unchanged. Oral administration of the SKGB extract improved all domains of sexual function. It can be used as an alternative medicine to improve sexual life in men with sexual dysfunction.

BJCP British Journal of Clinical Pharmacology

DOI:10.1111/j.1365-2125.2008.03236.x

Red ginseng for treating erectile dysfunction: a systematic review

Dai-Ja Jang,[1] Myeong Soo Lee,[2,3] Byung-Cheul Shin,[4] Young-Cheoul Lee[1] & Edzard Ernst[2]

[1]Korea Food Research Institute, Sungnam, South Korea, [2]Complementary Medicine, Peninsula Medical School, Universities of Exeter & Plymouth, Exeter, UK, [3]Department of Medical Research, Korea Institute of Oriental Medicine, Daejeon, South Korea and [4]Department of Oriental Rehabilitation Medicine, College of Oriental Medicine, Wonkwang University, Iksan, South Korea

Correspondence
Dr Myeong Soo Lee PhD, Department of Medical Research, Korea Institute of Oriental Medicine, Daejeon, 305–811, South Korea
Tel.: + 82 04 2868 9266
Fax: + 82 04 2863 9464.
E-mail: drmslee@gmail.com or mslee@kiom.re.kr

Keywords
erectile dysfunction, meta-analysis, red ginseng, systematic review

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19 February 2008
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28 August 2008

AIMS

Korean red ginseng (unskinned *Panax ginseng* before it is steamed or otherwise heated and subsequently dried) is one of the most widely used herbal remedies. This systematic review evaluates the current evidence for the effectiveness of red ginseng for treating erectile dysfunction.

METHODS

Systematic searches were conducted on 20 electronic databases without language restrictions. Hand-searches included conference proceedings and our files. All randomized clinical studies (RCT) of red ginseng as a treatment of erectile dysfunction were considered for inclusion. Methodological quality was assessed using the Jadad score.

RESULTS

Seven RCTs met all the inclusion criteria. Their methodological quality was low on average. Six of the included RCTs compared the therapeutic efficacy of red ginseng with placebo. The meta-analysis of these data showed a significant effect ($n = 349$, risk ratio, 2.40; 95% CI of 1.65, 3.51, $p < 0.00001$, heterogeneity: $tau^2 = 0.05$, $\chi^2 = 6.42$, $p = 0.27$, $I^2 = 22\%$). Subgroup analyses also showed beneficial effects of red ginseng in psychogenic erectile dysfunction ($n = 135$, risk ratio, 2.05; 95% CI of 1.33, 3.16, $p = 0.001$, heterogeneity: $\chi^2 = 0.08$, $p = 0.96$, $I^2 = 0\%$).

CONCLUSIONS

Collectively these RCTs provide suggestive evidence for the effectiveness of red ginseng in the treatment of erectile dysfunction. However, the total number of RCTs included in the analysis, the total sample size and the methodological quality of the primary studies were too low to draw definitive conclusions. Thus more rigorous studies are necessary.

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Phytomedicine. 2009 Aug;16(8):690-3. doi: 10.1016/j.phymed.2009.03.008. Epub 2009 May 9.

Evaluation of Crocus sativus L. (saffron) on male erectile dysfunction: a pilot study.

Shamsa A[1], Hosseinzadeh H, Molaei M, Shakeri MT, Rajabi O.

⊕ Author information

Abstract

In this study, the effect of Crocus sativus (saffron) was studied on male erectile dysfunction (ED). Twenty male patients with ED were followed for ten days in which each morning they took a tablet containing 200mg of saffron. Patients underwent the nocturnal penile tumescence (NPT) test and the international index of erectile function questionnaire (IIEF-15) at the start of the treatment and at the end of the ten days. After the ten days of taking saffron there was a statistically significant improvement in tip rigidity and tip tumescence as well as base rigidity and base tumescence. IIEF-15 total scores were significantly higher in patients after saffron treatment (before treatment 22.15+/-1.44; after treatment 39.20+/-1.90, p<0.001). Saffron showed a positive effect on sexual function with increased number and duration of erectile events seen in patients with ED even only after taking it for ten days.

J Integr Med. 2015 Jul;13(4):231-40. doi: 10.1016/S2095-4964(15)60176-5.

A systematic review of randomized controlled trials examining the effectiveness of saffron (Crocus sativus L.) on psychological and behavioral outcomes.

Hausenblas HA[1], Heekin K[2], Mutchie HL[2], Anton S[2].

⊕ Author information

Abstract

BACKGROUND: Throughout the past three decades, increased scientific attention has been given to examining saffron's (Crocus sativus L.) use as a potential therapeutic or preventive agent for a number of health conditions, including cancer, cardiovascular disease, and depression.

OBJECTIVE: The purpose of this systematic review is to examine and categorize the current state of scientific evidence from randomized controlled trials (RCTs) regarding the efficacy of saffron on psychological/behavioral outcomes.

SEARCH STRATEGY: Electronic and non-electronic systematic searches were conducted to identify all relevant human clinical research on saffron. The search strategy was extensive and was designed according to the "Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)." Reference lists of articles that met the inclusion criteria were searched. Only English language studies were reviewed.

INCLUSION CRITERIA: Saffron trials in combination with other substances and saffron safety studies were considered, in accordance with the PRISMA statement. Included studies must have a control group. Included studies must measure a physiological and/or a behavioral outcome.

DATA EXTRACTION AND ANALYSIS: The methodological quality of all included studies was independently evaluated by two reviewers using the Jadad score. Mean scores and P-values of measures were compared both inter- and intra-study for each parameter (i.e., depression).

RESULTS: Twelve studies met our inclusion criteria. These studies examined the effects of saffron on psychological/behavioral outcomes of: major depressive disorder (n=6), premenstrual syndrome (n = 1), sexual dysfunction and infertility (n=4), and weight loss/snacking behaviors (n=1). The data from these studies support the efficacy of saffron as compared to placebo in improving the following conditions: depressive symptoms (compared to anti-depressants and placebo), premenstrual symptoms, and sexual dysfunction. In addition, saffron use was also effective in reducing excessive snacking behavior.

CONCLUSION: Findings from initial clinical trials suggest that saffron may improve the symptoms and the effects of depression, premenstrual syndrome, sexual dysfunction and infertility, and excessive snacking behaviors. Larger multi-site clinical trials are needed to extend these preliminary findings.

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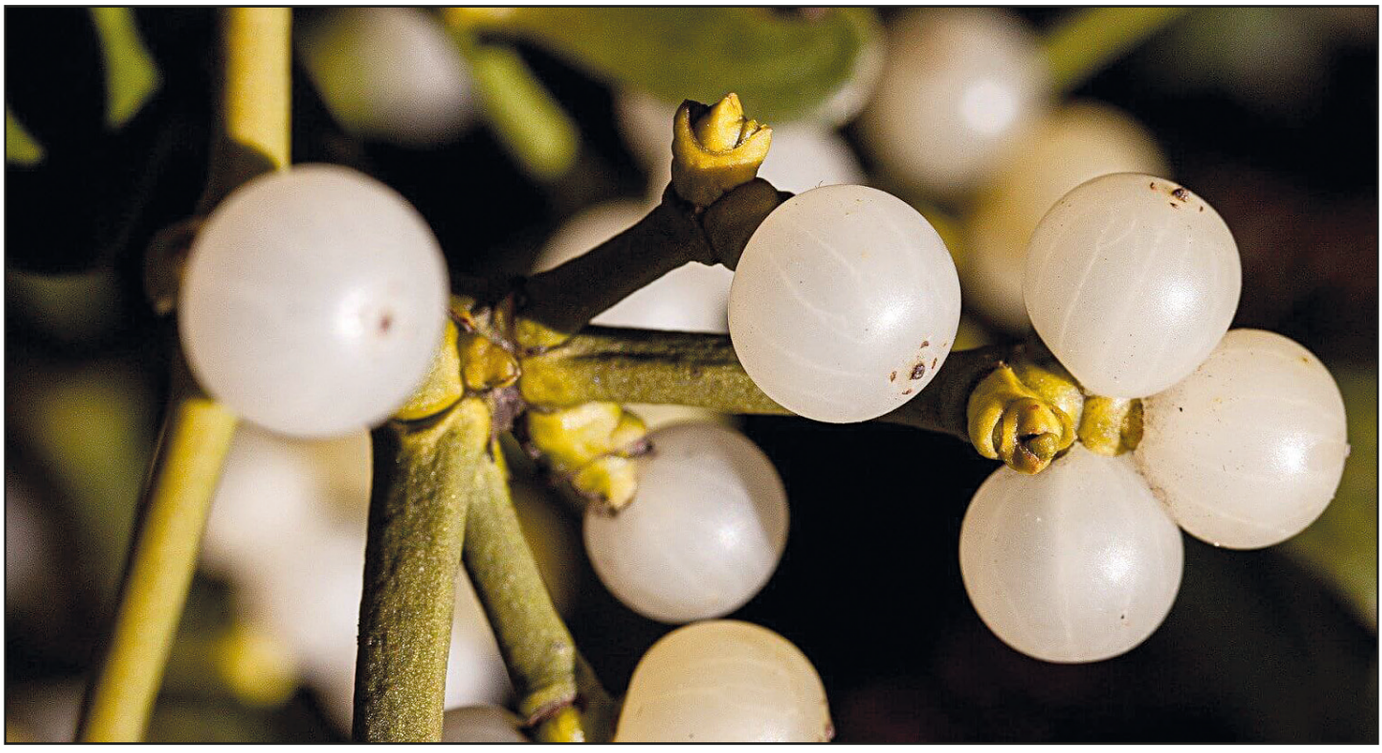
VISCUM ALBUM



> Azione sulle ossido-nitrico-sintetasi 2 e 3

Nat Prod Res. 2006 Nov;20(13):1176-82.

Viscum album aqueous extract induces NOS-2 and NOS-3 overexpression in Guinea pig hearts.

Tenorio-Lopez FA[1], Valle Mondragon LD, Olvera GZ, Torres Narvaez JC, Pastelin G.

⊕ Author information

Abstract

Viscum album L. aqueous extract, on the Langendorff isolated and perfused heart model, decreases coronary vascular resistance, when compared to control group (36.00 +/- 2.00 vs. 15.80 +/- 1.96 dyn s cm-5). Our data support the fact that this mechanism involves NOS-2 and NOS-3 overexpression (4.65 and 7.89 times over control, respectively), which is correlated with increases in NO (6.24 +/- 2.49 vs. 147.95 +/- 2.79 pmol) and cGMP production (43.94 +/- 2.00 vs. 74.81 +/- 1.96 pmol mg-1 of tissue), compared to control values. Such an effect is antagonized by gadolinium(III) chloride, L-NAME and ODQ. Therefore, coronary vasodilator effect elicited by V. album L. aqueous extract is mediated by the NO/sGC pathway.

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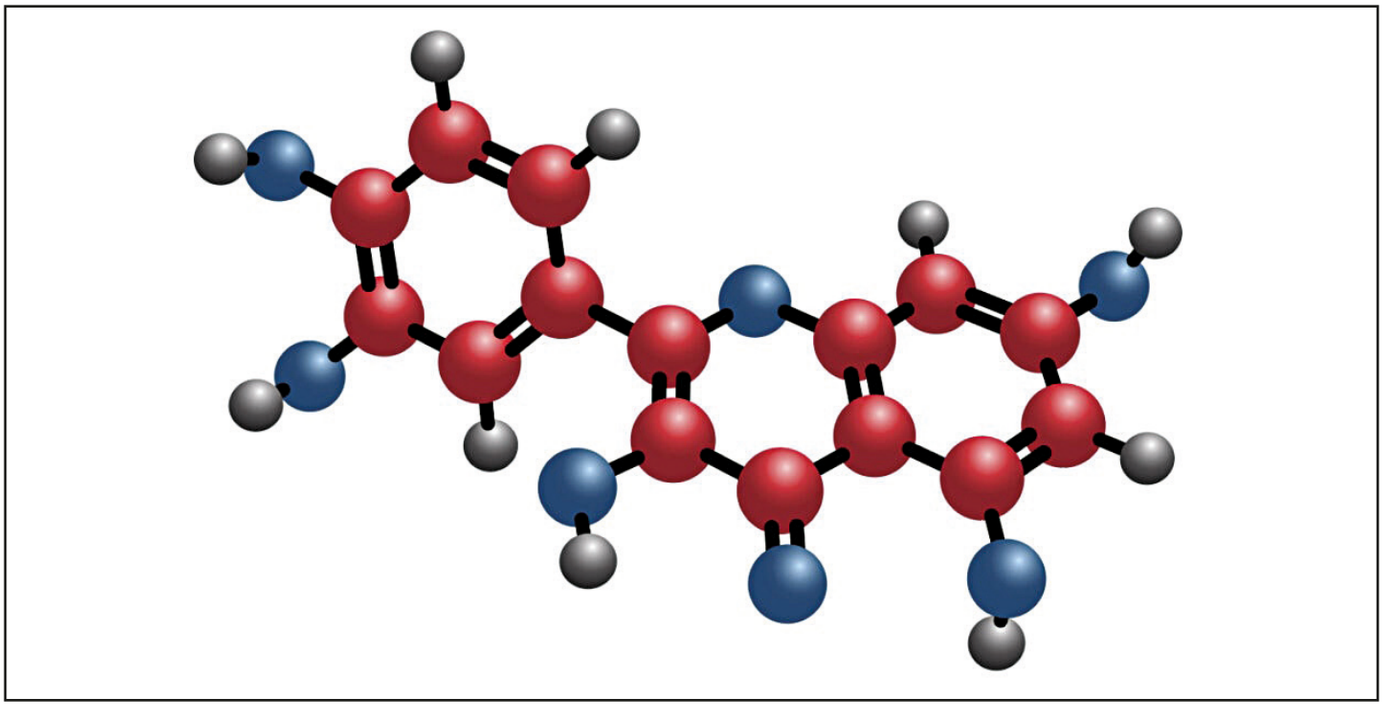
QUERCETINA



> Azione di protezione ed espressione sulle ossido-nitrico-sintetasi

Int J Clin Exp Med. 2015 May 15;8(5):7599-605. eCollection 2015.

Effects of quercetin on intracavernous pressure and expression of nitrogen synthase isoforms in arterial erectile dysfunction rat model.

Zhang Y[1], Huang C[2], Liu S[3], Bai J[4], Fan X[5], Guo J[6], Jia Y[7], Zhang Z[8], Chen X[9], Jia Y[5], Zhang P[4], Wang B[9], Zhang X[10].

⊕ Author information

Abstract

OBJECT: Oxidative stress involved in the regulation of arterial erectile dysfunction (A-ED). Previously report have indicated that quercetin have an antioxidant effect. In the current study, we have established the rats' model for study the therapeutic effect of quercetin on A-ED and further investigated the molecular mechanism of action.

METHODS: Wistar rats were divided into sham group, A-ED group, A-ED group with low dose of quercetin, and A-ED group with high dose of quercetin. Intracavernous pressure (ICP) and mean arterial pressure (MBp) are two important indicators used for evaluation the A-ED. The changes of ICP and MBp were determined by cavernous nerve electrostimulation after treatment of quercetin at indicated doses. The expression of nitric oxide synthase (NOS) subtypes was detected by RT-PCR and Western blotting.

RESULTS: Our results indicated that ICP was significantly reduced in A-ED rats model compared with sham group, and was significantly increased after quercetin treatment ($P < 0.01$), while no significant effect on the MBp. The data also showed that sGC inhibitor ODQ and NOS inhibitor LNNA can significantly inhibited the ICP which induced by quercetin. These results suggest that NO-cGMP signaling pathway plays a crucial role in A-ED. Then, we found that the mRNA and protein levels of eNOS were significantly reduced in A-ED group compared with sham group. After treated with quercetin may cause the eNOS RNA and protein were significantly up-regulated ($P < 0.01$), showing a dose-dependent effect. iNOS expression have a certain degree of increased after quercetin treatment. nNOS expression was not significantly increased before and after treated with quercetin. In a word, quercetin can improved the A-ED by up-regulated ICP, which related to up-regulation of NO-cGMP signaling pathway.

CONCLUSION: Preliminary results of this study suggested that quercetin protected expression and function of eNOS in cavernous endothelial cells, and restored part of normal function of NO-cGMP pathway in the process of penis erection.

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> Inibizione degli enzimi coinvolti nella produzione di radicali liberi

> Inibizione delle fosofodiesterasi-5

Phytother Res. 2016 Jul;30(7):1119-27. doi: 10.1002/ptr.5614. Epub 2016 Mar 28.

Erectogenic and Aphrodisiac Property of Moringa oleifera: Involvement of Soluble Epoxide Hydrolase Enzyme.

Goswami SK[1], Inamdar MN[1], Dethe SM[2], Gururaj GM[2], Jamwal R[2], Bhaskar A[2], Mundkinajeddu D[2], Agarwal A[2].

⊕ Author information

Abstract

Soluble epoxide hydrolase (sEH) inhibitors have been reported to improve penile erection; therefore, sEH could be useful for management of erectile dysfunction. Methanolic and aqueous extracts of 30 Indian medicinal plants were screened for their sEH inhibition potential. Fifteen extracts showed >50% inhibition when screened at 50 µg/mL in sEH inhibition assay. Methanolic extract of Moringa oleifera Lam. (Moringaceae) seeds (MEMO) was most potent with IC50 1.7 ± 0.1 µg/mL and was selected for in vitro studies on isolated rat corpus cavernosum smooth muscle and in vivo sexual behaviour studies on healthy and diabetic rats. Rats were divided into five groups, each containing six animals and treated orally with either water, vehicle (1% Tween-20), MEMO (45 and 90 mg/kg/day for 21 days), and standard drug, sildenafil (5 mg/kg/day for 7 days). An equal number of female rats were used, and the effect of MEMO and sildenafil was compared with that of vehicle. MEMO significantly relaxed isolated rat corpus cavernosum smooth muscle at 0.1-100 µg/mL in vitro and significantly increased ($p < 0.05$) sexual activity, intracavernous pressure/mean arterial pressure in normal and diabetic rats. The increase in erectile function of rats by MEMO could be because of its sEH inhibitory activity.

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CROCUS SATIVUS

J Zhejiang Univ Sci B. 2015 Mar;16(3):179-90. doi: 10.1631/jzus.B1400197.

Moringa oleifera extract enhances sexual performance in stressed rats.

Prabsattroo T[1], Wattanathorn J, Iamsaard S, Somsapt P, Sritragool O, Thukhummee W, Muchimapura S.

Author information

Abstract

Aphrodisiacs are required to improve male sexual function under stressful conditions. Due to the effects of oxidative stress and dopamine on male sexual function, we hypothesized that Moringa oleifera leaves might improve male sexual dysfunction induced by stress. Therefore, the effects on various factors playing important roles in male sexual behavior, such as antioxidant effects, the suppression of monoamine and phosphodiesterase type 5 (PDE-5) activities, serum testosterone and corticosterone levels, and histomorphological changes in the testes, of a hydroethanolic extract of M. oleifera leaves were investigated. Various doses of extract including 10, 50, and 250 mg/kg body weight (BW) were given orally to male Wistar rats before exposure to 12 h-immobilization stress for 7 d. The results demonstrated that the extract showed both antioxidant and monoamine oxidase type B (MAO-B) suppression activities. At 7 d of treatment, the low dose of extract improved sexual performance in stress-exposed rats by decreasing intromission latency and increasing intromission frequency. It also suppressed PDE-5 activity, decreased serum corticosterone level, but increased serum testosterone, numbers of interstitial cells of Leydig and spermatozoa. The increased numbers of interstitial cells of Leydig and spermatozoa might have been due to the antioxidant effect of the extract. The increased sexual performance during the intromission phase might have been due to the suppression of MAO-B and PDE-5 activities and increased testosterone. Therefore, M. oleifera is a potential aphrodisiac, but further research concerning the precise underlying mechanisms is still needed.

Biochem Res Int. 2015;2015:175950. doi: 10.1155/2015/175950. Epub 2015 Oct 5.

Phenolic Extract from Moringa oleifera Leaves Inhibits Key Enzymes Linked to Erectile Dysfunction and Oxidative Stress in Rats' Penile Tissues.

Oboh G[1], Ademiluyi AO[1], Ademosun AO[1], Olasehinde TA[2], Oyeleye SI[1], Boligon AA[3], Athayde ML[3].

Author information

Abstract

This study was designed to determine the antioxidant properties and inhibitory effects of extract from Moringa oleifera leaves on angiotensin-I-converting enzyme (ACE) and arginase activities in vitro. The extract was prepared and phenolic (total phenols and flavonoid) contents, radical (nitric oxide (NO), hydroxyl (OH)) scavenging abilities, and Fe(2+)-chelating ability were assessed. Characterization of the phenolic constituents was done via high performance liquid chromatography-diode array detection (HPLC-DAD) analysis. Furthermore, the effects of the extract on Fe(2+)-induced MDA production in rats' penile tissue homogenate as well as its action on ACE and arginase activities were also determined. The extract scavenged NO (*) , OH (*) , chelated Fe(2+), and inhibited MDA production in a dose-dependent pattern with IC50 values of 1.36, 0.52, and 0.38 mg/mL and 194.23 μg/mL, respectively. Gallic acid, chlorogenic acid, quercetin, and kaempferol were the most abundant phenolic compounds identified in the leaf extract. The extract also inhibited ACE and arginase activities in a dose-dependent pattern and their IC50 values were 303.03 and 159.59 μg/mL, respectively. The phenolic contents, inhibition of ACE, arginase, and Fe(2+)-induced MDA production, and radical (OH (*) , NO (*)) scavenging and Fe(2+)-chelating abilities could be some of the possible mechanisms by which M. oleifera leaves could be used in the treatment and/or management of erectile dysfunction.

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A base di L-Citrullina, acido folico ed estratti vegetali. Pino silvestre, corniolo e vischio svolgono un'azione antiossidante. L'acido folico contribuisce al normale metabolismo dell'omocisteina e alla riduzione del senso di stanchezza e affaticamento.

Contenuti medi	Per dose massima (3 bustine)	VNR%*
L-Citrullina	6000 mg	–
Pino e.s. di cui proantocianidine	150 mg 142,5 mg	– –
Acido folico	375 mcg	188%
Moringa	900 mg	–
Zafferano e.s. di cui safranale	30 mg 0,6 mg	– –
Ginseng e.s	1200 mg	–
Corniolo e.s.	300 mg	–
Vischio e.s.	150 mg	–
Quercetina	60 mg	–

*Valore nutritivo di riferimento giornaliero (adulti). REG UE 1169/2011

INGREDIENTI: L-Citrullina, Ginseng (Panax ginseng C.A. Meyer) frutti e.s.* D:E** 4:1; Moringa (Moringa oleifera Lam.) foglie e.s. D:E 4:1; Maltodestrine; Acidificante: acido citrico; Aroma; Corniolo (Cornus officinalis Siebold et Zucc.) frutti e.s.* D:E** 4:1; Pino (Pinus sylvestris L.) corteccia e.s.* tit 95% proantocianidine; Vischio (Viscum album L.) foglie e.s.* D:E** 4:1; Agente antiagglomerante: biossido di silicio; Edulcorante: sucralosio; Quercetina; Zafferano (Crocus sativus L.) stigmi e.s.* tit 2% in safranale; Acido folico (acido pteroilmonoglutamico).
Confezionato in atmosfera protettiva.
*e.s. = estratto secco; **D:E = rapporto droga/etsratto

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