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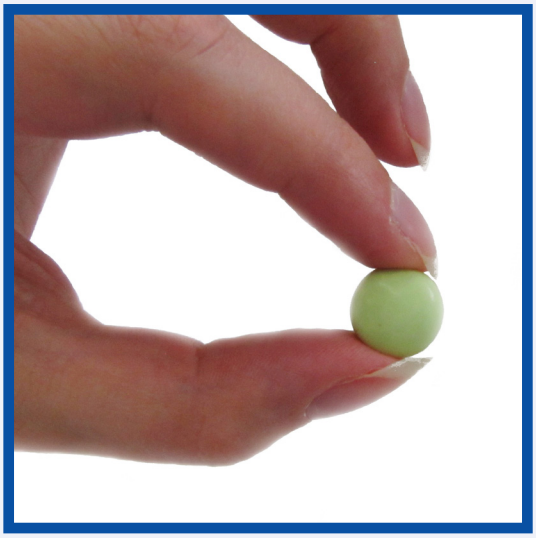
The Scientific Foundation for Herbal Medicinal Products

Agrimoniae herba
Agrimony

2019



E/S/C/O/P
European Scientific Cooperative On Phytotherapy

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E/S/C/O/P
MONOGRAPHS

***The* Scientific Foundation for**
Herbal Medicinal Products

AGRIMONIAE HERBA
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EUROPEAN SCIENTIFIC COOPERATIVE
ON PHYTOTHERAPY

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Plant illustrated on the cover: *Agrimonia eupatoria*

FOREWORD

On behalf of my colleagues in ESCOP it is my great pleasure here to mark the successful online programme for the publication of ESCOP Monographs. Interest in herbal medicinal products and their ingredients continues to stimulate research and the body of knowledge in this field is steadily growing. ESCOP takes full account of this in producing balanced compilations of new evidence, in the form of new ESCOP monographs and by regular revisions of previously published monographs. Our online publication, since 2011, ensures that readers and authorities are updated as rapidly as possible, and builds further on ESCOP's endeavours in the harmonization of European standards for herbal medicinal products.

The Board of ESCOP wishes to express its sincere gratitude to all members of the Scientific Committee, to external experts and to supervising editors. All have contributed their time and scientific expertise voluntarily to ensure the high standard of the monographs.

Dr. Tankred Wegener
Chair of the Board of ESCOP

PREFACE

ESCOP published its first monographs in the 1990's, initially as loose-leaf documents, then as two hardback books in 2003 and 2009. ESCOP Monographs have achieved a reputation for well-researched, comprehensive yet concise summaries of available scientific data pertaining to the efficacy and safety of herbal medicinal products.

The monograph format closely resembles the Summary of Product Characteristics (SPC) template, which is the basis for the information required for authorized/registered medicinal products, e.g. in the package leaflet, as laid down in Directive 2001/83/EC of the European Union.

Detailed work in studying the relevant scientific literature and compiling draft monographs relies on the knowledge, skills and dedication of individual project leaders and their colleagues within ESCOP Scientific Committee, as well as invited experts. After discussion and provisional acceptance by the Committee, draft monographs are reviewed by an eminent Board of Supervising Editors and all comments are taken into account before final editing and approval. In this way a wide degree of consensus is achieved.

We trust that rapid online access is helpful and convenient to all users of ESCOP Monographs. As always, ESCOP is indebted to the many contributors involved in the preparation of monographs, as well as to those who provide administrative assistance and hospitality to keep the enterprise running smoothly; our grateful thanks to them all.

NOTES FOR THE READER

From 2011 new and revised *ESCOP Monographs* are published as an online series only. Earlier monographs are available in two books, *ESCOP Monographs* Second Edition (2003) and the Second Edition *Supplement 2009*, but are not available online for copyright reasons.

After purchase of a single monograph, the specific items to be downloaded are:

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ABBREVIATIONS used in ESCOP monographs

AA	arachidonic acid
ABTS	2,2′-azino-bis(3-ethylbenzthiazoline-6-sulphonic acid)
ACE	angiotensin converting enzyme
ADP	adenosine diphosphate
ALAT or ALT	alanine aminotransferase (= SGPT or GPT)
ALP	alkaline phosphatase
anti-IgE	anti-immunoglobulin E
ASA	acetylsalicylic acid
ASAT or AST	aspartate aminotransferase (= SGOT or GOT)
ATP	adenosine triphosphate
AUC	area under the concentration-time curve
BMI	body mass index
BPH	benign prostatic hyperplasia
b.w.	body weight
cAMP	cyclic adenosine monophosphate
CAT	catalase
CCl_4	carbon tetrachloride
CI	confidence interval
C_{max}	maximum concentration of a substance in serum
CNS	central nervous system
CoA	coenzyme A
COX	cyclooxygenase
CSF	colony stimulating factor
CVI	chronic venous insufficiency
CYP	cytochrome P450
d	day
DER	drug-to-extract ratio
DHT	dihydrotestosterone
DMSO	dimethyl sulfoxide
DNA	deoxyribonucleic acid
DPPH	diphenylpicrylhydrazyl
DSM	Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association)
ECG	electrocardiogram
ED_{50}	effective dose in 50% of cases
EDTA	ethylenediamine tetraacetate
EEG	electroencephalogram
EMA	European Medicines Agency
ENT	ear, nose and throat
ER	oestrogen receptor
ERE	oestrogen-responsive element
FSH	follicle-stimulating hormone
GABA	gamma-aminobutyric acid
Gal	galactose
GFR	glomerular filtration rate
GGTP	gamma-glutamyl transpeptidase
GOT	glutamate oxalacetate transaminase (= SGOT)
GPT	glutamate pyruvate transaminase (= SGPT)
GSH	glutathione (reduced)
GSSG	glutathione (oxidised)
HAMA	Hamilton Anxiety Scale
12-HETE	12-hydroxy-5,8,10,14-eicosatetraenoic acid
HDL	high density lipoprotein
HIV	human immunodeficiency virus
HMPC	Committee on Herbal Medicinal Products (of the EMA)
HPLC	high-performance liquid chromatography
5-HT	5-hydroxytryptamine (= serotonin)
IC_{50}	concentration leading to 50% inhibition
ICD-10	International Statistical Classification of Diseases and Related Health Problems, Tenth Revision
ICH	The International Conference on Harmonisation of Technical Requirements for Registration of Pharmaceuticals for Human Use
ICSD	International Classification of Sleep Disorders
IFN	interferon
IL	interleukin
i.m.	intramuscular
iNOS	inducible nitric oxide synthase
INR	International Normalized Ratio, a measure of blood coagulation (clotting) tendency
i.p.	intraperitoneal
IPSS	International Prostate Symptom Score

i.v.	intravenous
kD	kiloDalton
KM Index	Kuppermann Menopausal Index
kPa	kiloPascal
LC-MS	liquid chromatography-mass spectrometry
LD_{50}	the dose lethal to 50% of animals tested
LDH	lactate dehydrogenase
LDL	low density lipoprotein
LH	luteinizing hormone
5-LOX	5-lipoxygenase
LPS	lipopolysaccharide
LTB_4	leukotriene B_4
M	molar (concentration)
MAO	monoamine oxidase
MBC	minimum bactericidal concentration
MDA	malondialdehyde
MFC	minimum fungicidal concentration
MIC	minimum inhibitory concentration
Mr	molecular
MRS	Menopause Rating Scale
MRSA	methicillin-resistant *Staphylococcus aureus*
MTD	maximum tolerated dose
MTT	3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide
MW	molecular weight
NBT	nitro blue tetrazolium
NF-κB	nuclear factor kappa-B
NO	nitric oxide
NOAEL	no observed adverse effect level
NOS	nitric oxide synthase
n.s.	not significant
NSAID	non-steroidal anti-inflammatory drug
ovx	ovariectomy or ovariectomized
ORAC	oxygen radical absorbance capacity
PA	pyrrolizidine alkaloid
PAF	platelet activating factor
PARP	poly (ADP-ribose) polymerase
PBMC	peripheral blood mononuclear cells
PCR	polymerase chain reaction
PEG	polyethylene glycol
PGE	prostaglandin E
Pgp	P-glycoprotein
PHA	phythaemagglutinin
p.o.	per os
POMS	profile of mood states
PVPP	polyvinylpolypyrrolidone
RANKL	receptor activator of nuclear factor kappa-B ligand
RNA	ribonucleic acid
ROS	reactive oxygen species
RT-PCR	reverse transcription polymerase chain reaction
s.c.	subcutaneous
SCI	spinal cord injury
SERM	selective oestrogen receptor modulator
SGOT or GOT	serum glutamate oxalacetate transaminase (= ASAT or AST)
SGPT or GPT	serum glutamate pyruvate transaminase (= ALAT or ALT)
SHBG	sex hormone binding globulin
SOD	superoxide dismutase
SSRI	selective serotonin reuptake inhibitor
STAI	state-trait anxiety inventory
$t_{1/2}$	elimination half-life
TBARS	thiobarbituric acid reactive substances
TC	total cholesterol
TGF-β	transforming growth factor-beta
TNF	tumour necrosis factor
TPA	12-*O*-tetradecanoylphorbol-13-acetate
URT	upper respiratory tract
URTI	upper respiratory tract infection
UTI	urinary tract infection
VAS	visual analogue scale
VLDL	very low density lipoprotein

AGRIMONIAE HERBA

2019

Agrimony

DEFINITION

Agrimony consists of the dried flowering tops of *Agrimonia eupatoria* L. It contains not less than 2.0 per cent of tannins, expressed as pyrogallol ($C_6H_6O_3$; Mr 126.1) and calculated with reference to the dried drug.

The material complies with the monograph of the European Pharmacopoeia [Agrimony].

CONSTITUENTS

The main characteristic constituents are tannins (3-11%), consisting mainly of proanthocyanidins (condensed tannins) with a small proportion of ellagitannins, of which agrimoniin is the main constituent (0.3-0.5%) [Von Gizycki 1950; Drozd 1983; Granica 2013].

Flavonoids (about 0.9%) [Carnat 1991; Granica 2013] including glycosides of quercetin, the 7-glucosides of luteolin and apigenin [Von Gizycki 1950; Ivanov 1970; Sendra 1972; Gorunovic 1989; Carnat 1991] and 3-glycosides of kaempferol and kaempferide [Bilia 1993a,1993b], as well as triterpenoids such as ursolic acid [Le Men 1995], euscapic acid and the 28-glucosyl esters of euscapic acid and tormentic acid [Bilia 1993b].

Other constituents include phenolic acids [Bucková 1972; Granica 2013], β-sitosterol [Bilia 1993a], polysaccharides (19.5%) [Drozd 1983; Krzaczek 1985], and minerals (7.3-7.9%) [Von Gizycki 1950; Carnat 1991; Szentmihályi 1998].

CLINICAL PARTICULARS

Therapeutic indications

Internal use
Agrimony has been widely documented as a remedy to treat mild diarrhoea [Agrimonia; Blaschek 1993; Dorsch 2002].

External use
Locally as a gargle for inflammation of the oral and pharyngeal mucosa [Gray 1998; Dorsch 2002] and as a compress or rinse to support the healing of wounds [Gorunovic 1989; Blaschek 1993].

Efficacy for these indications is plausible on the basis of human experience and long-standing use.

Posology and method of administration

Dosage

Internal use

Adults: 3-12 g of dried herb daily, or as an infusion or equivalent preparation [Blaschek 1993; Dorsch 2002]; three times daily, 1-3 mL of a liquid extract (1:1 in 25% ethanol) or 5-10 mL of a tincture (1:5 in 45% ethanol) [Gray 1998].

Children, average daily dose: *1-4 years of age*, 1-2 g; *4-10 years of age*, 2-3 g; *10-16 years of age*, 3-6 g [Agrimonia].

External use
A 10% decoction used several times daily, locally in gargles or externally as a compress or rinse [Dorsch 2002].

Method of administration
For oral administration or external use.

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Duration of administration
No restriction.
If symptoms persist or worsen, medical advice should be sought.

Contra-indications
None known.

Special warnings and special precautions for use
None required.

Interaction with other medicaments and other forms of interaction
None reported.

Pregnancy and lactation
No human data available. In accordance with general medical practice, the product should not be used during pregnancy or lactation without medical advice.

Effects on ability to drive and use machines
None known.

Undesirable effects
None known.

Overdose
None known.

PHARMACOLOGICAL PROPERTIES

Pharmacodynamic properties

In vitro experiments
A hydroethanolic extract (2.5 g drug/100 mL, ethanol 50% V/V) showed strong elastase-inhibiting activity [Carnat 1991].

A dried hydromethanolic extract (50% V/V) showed no spasmolytic activity on spontaneous or induced contractions of isolated guinea-pig ileum at concentrations up to 800 µg/mL [Izzo 1996].

A decoction (1 mg/ml) stimulated 2-deoxyglucose transport (1.4-fold), glucose oxidation (1.4-fold), glycogenesis (2.0-fold) and lactate release (1.4 fold) in isolated mouse abdominal muscle, comparable to the effects evoked by 0.01 µM insulin. The activity of agrimony on insulin secretion was also evaluated. A decoction (0.25-10 mg/ml) evoked a stepwise 1.9- to 3.8-fold stimulation of insulin secretion from the BRIN-BD11 rat pancreatic B-cell line with no detrimental effect on cell viability. These experiments demonstrated that agrimony has antihyperglycaemic, insulin-like and insulin-releasing activity [Gray 1998].

An infusion (1 g agrimony/200 mL water) demonstrated considerable antioxidant activity. Relative to the reactivity of Trolox (6-hydroxy-2,5,7,8-tetramethylchroman-2-carboxylic acid) as a standard, the Trolox equivalent antioxidant capacity (TEAC) was found to be 3.76 mM [Ivanova 2005].

Aqueous extraction of agrimony aerial parts was performed at four different temperatures in order to determine the optimal extraction temperature for inhibiting the release of hepatitis B surface antigen (HBsAg) from hepatitis B virus-infected HepG2.2.15 cells. Secretion was inhibited dose-dependently and the EC_{50} values for each aqueous extract at 37 °C, 45 °C, 55 °C and 60 °C were 168 µg/mL (extrapolated value), 127.91 ± 4.21 µg/mL, 115.24 ± 4.75 µg/mL and 74.29 ± 41.97 µg/mL respectively. Cell growth was not influenced by treatment with the aqueous extracts at concentrations of 44–132 µg/mL. The inhibitory activity of the extracts on HBsAg secretion varied over the growing season and was the highest at mid-July [Kwon 2005].

An aqueous extract significantly ($p<0.001$) suppressed lipopolysaccharide-induced nitric oxide production in BV2 microglial cells at concentrations of 0.01, 0.1 and 1 mg/ml compared to control. The extract at the same concentrations also significantly ($p<0.05$ to 0.001) suppressed lipopolysaccharide-induced production of the proinflammatory cytokines tumor necrosis factor, interleukin 1 beta and interleukin 6, and inhibited the expression of inducible nitric oxide synthase, in a dose-dependent manner [Bae 2010].

A methanolic extract (80%) and *n*-hexane, BuOH, EtOAc and H_20 fractions significantly attenuated glutamate-induced oxidative stress in HT22 hippocampal cells. Isolated flavonoids also showed a neuroprotective effect on glutamate-induced toxicity in HT22 cells [Lee 2010].

An ethanolic extract (45%; DER 1:2) demonstrated high growth inhibition against *Helicobacter pylori* and *Campylobacter jejuni*. At a dilution of 1:25 the % of inhibition ± SD against *H. pylori* was 97 ± 5 % and against *C. jejuni* was 96 ± 30%. At a dilution of 1:100, results were 5 ± 11 % and 30 ± 37% respectively [Cwikla 2010].

No significant antiadhesion activity (IC_{50} values >35 mg/mL) against *Campylobacter jejuni* was found for a hydroethanolic extract [Bensch 2011].

A lyophilized infusion prepared according to the Pharmacopoeia Bohemoslovaca 4 did not demonstrate cytotoxic activity at the tested concentrations (0.1 mg/mL and 0.05 mg/mL) on a THP-1 cell line after 24 h incubation. The infusion did not alter CAT activity but did decrease the activity of SOD. Good antioxidant activity was shown in the ABTS assay (RC_{50}: 0.79 mg/mL). Further antioxidant properties were shown in a test assessing plasmid DNA protection and the infusion had a lower damage index than the standard rutin [Kuczmannová 2015].

Various extracts were obtained by macerating 30 g of agrimony in 150 mL of a range of solvents, namely ethanol, diethyl ether, water and acetone. The following dried extracts were obtained: 5.42 g of water extract, 0.55 g of diethyl ether extract, 0.76 g of acetone extract and 2.4 g of ethanol extract. The acetone extract (at 250 µg/mL) exhibited the greatest DPPH radical scavenging activity (97.13%), while the water and ethanol extracts also exhibited high antioxidant activity. The strongest antimicrobial activity was detected against gram positive bacteria, with the acetone extract demonstrating the highest activity. BIC_{50} (inhibitory concentration to reduce biofilm coverage by 50%) values for the acetone extract were 4315 µg/mL for *P. mirabilis* and 4469.5 µg/mL for *P. aeruginosa* [Muruzović 2016].

An infusion (20 g agrimony/600mL water, for 15 min) and its ethyl acetate fraction showed considerable antioxidant activity when calculated relative to the reactivity of DPPH as standard, with respective EC_{50} values of 12.80 µg/mL and 4.60 µg/mL. The EC_{50} values for superoxide anion scavenging activity were 3.34 µg/mL for the infusion and 13.59 µg/mL for the fraction. Respective EC_{50} values for hydroxyl radical-scavenging activity were 126.99 µg/mL and 90.97 µg/mL. In experiments assessing cytotoxicity and effects on NO production, RAW 264.7 macrophages were incubated for an hour with various concentrations of the infusion and fraction and then with LPS for 24 hours. Cell viability of the macrophages (measured as % of LPS) was only significantly ($p<0.001$) reduced by the highest concentrations tested of the infusion (770 µg/mL) and fraction (276 µg/mL). LPS-induced increases in nitrite production (% of LPS) were only

significantly ($p<0.001$) inhibited, without detrimental effects to cells, by the infusion at 382 µg/mL and the fraction at 138 µg/mL. In a further experiment assessing NO production, cells were cultured with S-nitroso-N-acetylpenicillamine (SNAP). The infusion significantly ($p<0.05$) inhibited nitrite production (% of SNAP) by 36.67% at 382 µg/mL and the fraction by 29.46% at 138 µg/mL [Santos 2017].

In vivo experiments

After oral administration of an infusion or decoction to rats at a dose equivalent to 3 g dried herb per kg b.w., the volume of urine excreted over the following 6 hours was significantly ($p<0.01$) less than that from rats treated with distilled water, while the amount of uric acid excreted in the urine during the first 4 hours was significantly ($p<0.01$) greater than (more than two-fold) that of rats treated with distilled water, suggesting a uricosuric effect. The amount of urea excreted remained largely unchanged [Giachetti 1986]. Further experiments with rats showed that, while diuresis resulting from distilled water provoked loss of electrolytes, agrimony compensated for electrolyte loss, particularly that of potassium [Giachetti 1989].

Induction of diabetes in mice by treatment with streptozotocin (STZ) led, after 20 days, to reduced body weight ($p<0.01$) and significant increases in fluid and food intake and in plasma glucose (all $p<0.001$ compared to untreated controls). Incorporation of agrimony into the diet (62.5 g/kg in food) and drinking water (2.5 g/litre of a diluted decoction), for 5 days before and subsequent to administration of STZ, counteracted the loss of body weight to some extent and significantly counteracted polydipsia ($p<0.001$), hyperphagia ($p<0.01$) and hyperglycaemia ($p<0.05$) compared to STZ-treated mice receiving a normal diet [Swanston-Flatt 1990; Gray 1998].

A lyophilized aqueous extract (yield 17.1%), containing 8.34 and 11.82 mg/g extract of luteolin 7-glucuronide and apigenin 7-glucuronide respectively, was tested for hepatoprotective activity against chronic ethanol-induced liver injury in rats. Animals were treated orally with the extract at 10, 30, 100 and 300 mg/kg/day. The ethanol-induced increase in ALT was attenuated by the 10 and 30 mg/kg doses, while the increase in AST was attenuated by the 10, 30 and 100 mg/kg doses. Micro- and macrovesicular steatosis and excessive inflammatory cell infiltration were attenuated by the 30 mg/kg dose. The 30 mg/kg dose also had the following effects: prevented the ethanol-induced increase in serum concentrations of TNF-α and IL-6, attenuated the induced increase in CYP2E1 activity, the increase in MDA level and the decrease of GSH content, as well as the increase in hepatic level of TLR4 protein expression. It also attenuated the nuclear levels of p65, a subunit of NF-κB, and prevented the ethanol-induced increases in MyD88, COX-2, and iNOS protein expression [Yoon 2012].

An infusion prepared according to the Pharmacopoeia Bohemoslovaca 4 was provided to male Sprague-Dawley rats (n = 20; 6 months old) for 5 weeks prior to experimental skin flap surgery. The mean vital area of the skin flap 7 days after surgery was 48.7% ± 9.4% in the control group (water only), whereas the agrimony treated rats had a significantly ($p<0.05$) increased flap viability at 58.1% ± 7.7% [Kuczmannová 2015].

The antinociceptive activity of a dried ethanolic extract (500 g aerial parts macerated in a volume of 80% ethanol equal to ten times that of the sample) was investigated in a rat model of cisplatin-induced neuropathy. The effect of the extract (200 mg/kg p.o.) was compared with that of the positive control gabapentin (100 mg/kg i.p.) in various tests. Paw withdrawal duration in response to pin prick was considerably lower in the agrimony group than the cisplatin only control group at week 1 and was sustained at week 4. Gabapentin also showed a lower withdrawal duration than the cisplatin-only control group, but this effect was not sustained at week 4. Similar results were noted in the test of paw-withdrawal threshold in response to mechanically-induced pressure [Lee 2016].

An infusion (20 g agrimony/ 600mL water, for 15 min) and its ethyl acetate fraction were tested for anti-inflammatory and analgesic activity in several assays. In the carrageenan-induced rat paw oedema assay, rats were divided into six groups (n = 6–8): negative control group received water (0.5 µL/g p.o.), positive control group received diclofenac sodium (10 mg/kg i.p.), and test groups received one of two oral doses of the infusion (99.59 mg/kg, D1; 199.18 mg/kg, D2) or the ethyl acetate fraction (18.12 mg/kg, D3; and 36.24 mg/kg, D4) reconstituted in water. The infusion reduced oedema by 43.2% (D1) and 52.2% (D2) and the ethyl acetate fraction reduced it by 34.6% (D3) and 35.4% (D4) compared to the negative control.

Analgesic activity of the preparations was tested using several assays in mice. Neither preparation demonstrated a significant increase in the reaction time of mice in the hot plate test. In contrast, the preparations did inhibit abdominal writhing induced by acetic acid. Mice were divided into six groups (n = 6–8): negative control group received water (0.5 µL/g p.o.), positive control group received diclofenac sodium (10 mg/kg i.p.), and test groups received one of two oral doses of the infusion (199.18 mg/kg, D5 and 398.26 mg/kg, D6) or the ethyl acetate fraction (36.24 mg/kg, D7; 72.48 mg/kg, D8), reconstituted in water. Diclofenac sodium inhibited writhing by 71.3%, while the average number of abdominal constrictions was significantly ($p<0.05$) reduced by D5 (43.5%), D6 (49.8%), D7 (29.2%) and D8 (46.8%) compared to the negative control. Only the D8 dose was tested in the formalin test. It did not show any relevant effect in the early phase of pain response but did reduce time spent licking in the late phase by 32.5% [Santos 2017].

Pharmacological studies in humans

An infusion of the dried aerial parts (1 g in 200 ml water) was given to 19 healthy volunteers (aged 18 to 55 years) twice a day (9 am and 2 pm) for 30 days. Fasting blood samples were taken on days 0 and 30. Significant increases from baseline were found on day 30 for HDL cholesterol ($p<0.05$) and total cholesterol ($p<0.01$), while there were non-significant increases in LDL cholesterol, triglycerides and glucose; all markers remained within reference values. Total antioxidant capacity had significantly ($p<0.001$) increased at day 30. There was a significant ($p<0.05$) decrease in serum levels of the pro-inflammatory cytokine IL-6 at day 30. Plasma levels of adiponectin were not significantly changed at day 30, but were found to be positively correlated with HDL cholesterol levels [Ivanova 2013].

Clinical studies

Patients with cutaneous porphyria (n = 20) were treated orally with an infusion 3-4 times daily (and no other treatment) in an open study. After 15 days substantial improvements in skin eruptions were observed together with decreases in serum iron levels and urinary porphyrins (intensely hyperchromic urine after initial doses, decolorizing to normal over the following days). All the patients showed improvements in general health (appetite, lack of dyspepsia, regularity) and no adverse reactions were reported [Patrascu 1984].

Pharmacokinetic properties

No data available.

Preclinical safety data

Mutagenicity

In the Ames test, using *Salmonella typhimurium* strains TA98

and TA100 with and without metabolic S9 mix activation, a commercial tincture (ethanol 70%, 1:5) [Schimmer 1994] and a methanolic extract [Bilia 1993a] from agrimony did not increase the number of revertants and showed no evidence of mutagenicity.

Clinical safety data

No adverse effects were observed in the clinical study described above, in which 20 patients were treated orally with an infusion of agrimony 3-4 times daily for 15 days Patrascu 1984].

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E/S/C/O/P
MONOGRAPHS

MOST RECENT VERSIONS

Title	Common name	Publication
ABSINTHII HERBA	Wormwood	Second Edition, 2003
AGNI CASTI FRUCTUS	Agnus Castus	Second Edition, 2003
AGRIMONIAE HERBA	Agrimony	Online Series, 2019
ALCHEMILLAE HERBA	Lady's Mantle	Online Series, 2013
ALLII SATIVI BULBUS	Garlic	Online Series, 2019
ALOE BARBADENSIS	Barbados Aloes	Online Series, 2014
ALOE CAPENSIS	Cape Aloes	Online Series, 2014
ALTHAEAE RADIX	Marshmallow Root	Online Series, 2018
ANGELICAE RADIX	Angelica Root	Supplement 2009
ANISI FRUCTUS	Aniseed	Online Series, 2014
ARNICAE FLOS	Arnica Flower	Second Edition, 2003
ARCTII RADIX	Burdock Root	Online Series, 2016
BALLOTAE NIGRAE HERBA	Black Horehound	Online Series, 2015
BETULAE FOLIUM	Birch Leaf	Online Series, 2015
BOLDI FOLIUM	Boldo Leaf	Second Edition, 2003
CALENDULAE FLOS	Calendula Flower	Second Edition, 2003
CAPSICI FRUCTUS	Capsicum	Supplement 2009
CARVI AETHEROLEUM	Caraway Oil	Online Series, 2019
CARVI FRUCTUS	Caraway Fruit	Second Edition, 2003
CARYOPHYLLI AETHEROLEUM	Clove Oil	Online Series, 2014
CENTAURII HERBA	Centaury	Online Series, 2015
CENTELLAE ASIATICAE HERBA	Centella	Supplement 2009
CHAMOMILLAE ROMANAE FLOS	Roman Chamomile Flower	Online Series, 2019
CHELIDONII HERBA	Greater Celandine	Second Edition, 2003
CIMICIFUGAE RHIZOMA	Black Cohosh	Online Series, 2011
CINNAMOMI CORTEX	Cinnamon	Second Edition, 2003
COLAE SEMEN	Cola	Online Series, 2014
CRATAEGI FOLIUM CUM FLORE	Hawthorn Leaf and Flower	Second Edition, 2003
CRATAEGI FRUCTUS	Hawthorn Berries	Supplement 2009
CUCURBITAE SEMEN	Pumpkin Seed	Supplement 2009
CURCUMAE LONGAE RHIZOMA	Turmeric	Second Edition, 2003
CURCUMAE XANTHORRHIZAE RHIZOMA	Javanese Turmeric	Supplement 2009
CYNARAE FOLIUM	Artichoke Leaf	Supplement 2009
ECHINACEAE ANGUSTIFOLIAE RADIX	Narrow-leaved Coneflower Root	Online Series, 2019
ECHINACEAE PALLIDAE RADIX	Pale Coneflower Root	Online Series, 2018
ECHINACEAE PURPUREAE HERBA	Purple Coneflower Herb	Supplement 2009
ECHINACEAE PURPUREAE RADIX	Purple Coneflower Root	Supplement 2009
ELEUTHEROCOCCI RADIX	Eleutherococcus	Supplement 2009
EQUISETI HERBA	Equisetum stem	Online Series, 2018
EUCALYPTI AETHEROLEUM	Eucalyptus Oil	Second Edition, 2003
FILIPENDULAE ULMARIAE HERBA	Meadowsweet	Online Series, 2015
FOENICULI AETHEROLEUM	Fennel Oil	Online Series, 2019
FOENICULI FRUCTUS	Fennel Fruit	Online Series, 2019
FRANGULAE CORTEX	Frangula Bark	Online Series, 2017
FUMARIAE HERBA	Fumitory	Online Series, 2018
GENTIANAE RADIX	Gentian Root	Online Series, 2014
GINKGO FOLIUM	Ginkgo Leaf	Second Edition, 2003
GINSENG RADIX	Ginseng	Second Edition, 2003
GRAMINIS RHIZOMA	Couch Grass Rhizome	Online Series, 2016
GRINDELIAE HERBA	Grindelia	Online Series, 2015
HAMAMELIDIS AQUA	Hamamelis Water	Online Series, 2012
HAMAMELIDIS CORTEX	Hamamelis Bark	Online Series, 2012
HAMAMELIDIS FOLIUM	Hamamelis Leaf	Online Series, 2012
HARPAGOPHYTI RADIX	Devil's Claw Root	Supplement 2009
HEDERAE HELICIS FOLIUM	Ivy Leaf	Second Edition, 2003
HIPPOCASTANI SEMEN	Horse-chestnut Seed	Second Edition, 2003
HYDRASTIS RHIZOMA	Goldenseal rhizome	Online Series, 2013
HYPERICI HERBA	St. John's Wort	Online Series, 2018

JUNIPERI PSEUDO-FRUCTUS	Juniper	Second Edition, 2003
LAVANDULAE FLOS/AETHEROLEUM	Lavender Flower/Oil	Supplement 2009
LEONURI CARDIACAE HERBA	Motherwort	Online Series, 2019
LICHEN ISLANDICUS	Iceland Moss	Second Edition, 2003
LINI SEMEN	Linseed	Online Series, 2017
LIQUIRITIAE RADIX	Liquorice Root	Second Edition, 2003
LUPULI FLOS	Hop Strobile	Second Edition, 2003
MALVAE FLOS	Mallow Flower	Online Series, 2016
MARRUBII HERBA	White horehound	Online Series, 2013
MATRICARIAE FLOS	Matricaria Flower	Second Edition, 2003
MELALEUCAE AETHEROLEUM	Tea Tree Oil	Supplement 2009
MELILOTI HERBA	Melilot	Second Edition, 2003
MELISSAE FOLIUM	Melissa Leaf	Online Series, 2013
MENTHAE PIPERITAE AETHEROLEUM	Peppermint Oil	Second Edition, 2003
MENTHAE PIPERITAE FOLIUM	Peppermint Leaf	Online Series, 2019
MENYANTHIDIS TRIFOLIATAE FOLIUM	Bogbean Leaf	Online Series, 2013
MILLEFOLII HERBA	Yarrow	Supplement 2009
MYRRHA	Myrrh	Online Series, 2014
MYRTILLI FRUCTUS	Bilberry Fruit	Online Series, 2014
OLIBANUM INDICUM	Indian Frankincense	Supplement 2009
ONONIDIS RADIX	Restharrow Root	Online Series, 2015
ORTHOSIPHONIS FOLIUM	Java Tea	Online Series, 2014
PASSIFLORAE HERBA	Passion Flower	Second Edition, 2003
PAULLINIAE SEMEN	Guarana Seed	Supplement 2009
PELARGONII RADIX	Pelargonium Root	Online Series, 2015
PIPERIS METHYSTICI RHIZOMA	Kava-Kava	Second Edition, 2003
PLANTAGINIS LANCEOLATAE FOLIUM/HERBA	Ribwort Plantain Leaf/Herb	Online Series, 2013
PLANTAGINIS OVATAE SEMEN	Ispaghula Seed	Second Edition, 2003
PLANTAGINIS OVATAE TESTA	Ispaghula Husk	Online Series, 2016
POLYGALAE RADIX	Senega Root	Second Edition, 2003
PRIMULAE RADIX	Primula Root	Second Edition, 2003
PRUNI AFRICANAE CORTEX	Pygeum Bark	Supplement 2009
PSYLLII SEMEN	Psyllium Seed	Online Series, 2017
RATANHIAE RADIX	Rhatany Root	Online Series, 2017
RHAMNI PURSHIANI CORTEX	Cascara	Online Series, 2015
RHEI RADIX	Rhubarb	Online Series, 2018
RIBIS NIGRI FOLIUM	Blackcurrant Leaf	Online Series, 2017
ROSAE PSEUDO-FRUCTUS	Dog Rose Hip	Supplement 2009
ROSMARINI FOLIUM	Rosemary Leaf	Second Edition, 2003
RUSCI RHIZOMA	Butcher's Broom	Online Series, 2017
SALICIS CORTEX	Willow Bark	Online Series, 2017
SAMBUCI FLOS	Elder flower	Online Series, 2013
SALVIAE OFFICINALIS FOLIUM	Sage Leaf	Second Edition, 2003
SALVIA TRILOBAE FOLIUM	Sage Leaf, Three-lobed	Online Series, 2014
SENNAE FOLIUM	Senna Leaf	Second Edition, 2003
SENNAE FRUCTUS ACUTIFOLIAE	Alexandrian Senna Pods	Second Edition, 2003
SENNAE FRUCTUS ANGUSTIFOLIAE	Tinnevelly Senna Pods	Second Edition, 2003
SERENOAE REPENTIS FRUCTUS (SABAL FRUCTUS)	Saw Palmetto Fruit	Second Edition, 2003
SERPYLLI HERBA	Wild Thyme	Online Series, 2014
SOLIDAGINIS VIRGAUREAE HERBA	European Golden Rod	Online Series, 2018
SILYBI MARIANI FRUCTUS	Milk Thistle Fruit	Supplement 2009
SYMPHYTI RADIX	Comfrey Root	Online Series, 2012
TANACETI PARTHENII HERBA	Feverfew	Online Series, 2014
TARAXACI FOLIUM	Dandelion Leaf	Second Edition, 2003
TARAXACI RADIX	Dandelion Root	Second Edition, 2003
THYMI HERBA	Thyme	Second Edition, 2003
TORMENTILLAE RHIZOMA	Tormentil	Online Series, 2013
TRIGONELLAE FOENUGRAECI SEMEN	Fenugreek	Second Edition, 2003
UNCARIAE TOMENTOSAE CORTEX	Cat's Claw Bark	Online Series, 2018
URTICAE FOLIUM/HERBA	Nettle Leaf/Herb	Online Series, 2018
URTICAE RADIX	Nettle Root	Online Series, 2015
UVAE URSI FOLIUM	Bearberry Leaf	Online Series, 2012
VACCINII MACROCARPI FRUCTUS	Cranberry	Supplement 2009
VALERIANAE RADIX	Valerian Root	Supplement 2009
VERBASCI FLOS	Mullein Flower	Online Series, 2014
VIOLAE HERBA CUM FLORE	Wild Pansy	Online Series, 2015
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