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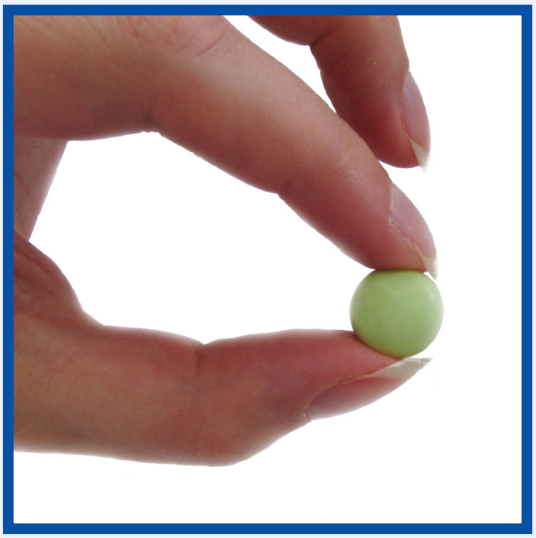
The Scientific Foundation for Herbal Medicinal Products

Alchemillae herba

Alchemilla / Lady's Mantle

2013



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

ALCHEMILLAE HERBA
Alchemilla / Lady's Mantle

2013

E/S/C/O/P
EUROPEAN SCIENTIFIC COOPERATIVE
ON PHYTOTHERAPY

ESCOP Monographs were first published in loose-leaf form progressively
from 1996 to 1999 as Fascicules 1-6, each of 10 monographs

Second Edition, completely revised and expanded

Second Edition, Supplement 2009

ONLINE SERIES

ISBN 978-1-901964-06-6

Alchemillae herba - Alchemilla / Lady's Mantle

Published by the European Scientific Cooperative on Phytotherapy (ESCOP)
Notaries House, Chapel Street, Exeter EX1 1EZ, United Kingdom
www.escop.com

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Edited by Simon Mills and Roberta Hutchins
Cover photograph by Barbara Steinhoff (*Alchemilla vulgaris*)
Cover and text design by Martin Willoughby
Typeset in Optima by Roberta Hutchins

Plant illustrated on the cover: *Alchemilla vulgaris*

FOREWORD

It is a great pleasure for me to introduce the online era of ESCOP Monographs. Interest in herbal medicinal products continues to stimulate research on herbal substances and the body of knowledge in this field is steadily growing. ESCOP takes account of this by preparing new monographs and - as the only organisation in the field at the moment - particularly through regular revision of our published monographs. In order to provide readers and authorities with balanced compilations of scientific data as rapidly as possible, ESCOP Monographs will be published online from now on. This contemporary way of publishing adds further momentum to ESCOP's endeavours in the harmonization of European standards for herbal medicinal products.

The Board of ESCOP wishes to express its sincere gratitude to the members of the Scientific Committee, external experts and supervising editors, and to Peter Bradley, the final editor of every monograph published up to March 2011. All have voluntarily contributed their time and scientific expertise to ensure the high standard of the monographs.

Liselotte Krenn
Chair of the Board of ESCOP

PREFACE

Over the 15 years since ESCOP published its first monographs, initially as loose-leaf documents then as two hardback books, 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 Second Edition, published in 2003 with a Supplement in 2009, covered a total of 107 herbal substances.

The monograph texts are prepared in the demanding format of the Summary of Product Characteristics (SPC), a standard document required in every application to market a medicinal product for human use within the European Union and ultimately providing information for prescribers and users of individual products.

As a change in style, literature references are now denoted by the name of the first author and year of publication instead of reference numbers; consequently, citations at the end of a monograph are now in alphabetical order. This is intended to give the reader a little more information and perspective when reading the text.

Detailed work in studying the pertinent scientific literature and compiling draft monographs relies to a large extent on the knowledge, skills and dedication of individual project leaders within ESCOP Scientific Committee, as well as invited experts. After discussion and provisional acceptance by the Committee, draft monographs are appraised 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, but it is a time-consuming process.

To accelerate the publication of new and revised monographs ESCOP has therefore decided to publish them as an online series only, commencing in 2011. We trust that rapid online access will prove 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:

Front cover
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Notes for the Reader
Abbreviations
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Members of ESCOP
Board of Supervising Editors
ESCOP Scientific Committee
Board of Directors of ESCOP

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
CI	confidence interval
C_{max}	maximum concentration of a substance in serum
CNS	central nervous system
CoA	coenzyme A
COX	cyclooxygenase
CVI	chronic venous insufficiency
CYP	cytochrome P450
DER	drug-to-extract ratio
DHT	dihydrotestosterone
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 B4
M	molar (concentration)
MAO	monoamine oxidase
MBC	minimum bactericidal concentration
MDA	malondialdehyde
MFC	minimum fungicidal concentration
MIC	minimum inhibitory concentration
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	necrosis factor
NO	nitric oxide
NOS	nitric oxide synthase
n.s.	not significant
NSAID	non-steroidal anti-inflammatory drug
ORAC	oxygen radical absorbance capacity
ovx	ovariectomy or ovariectomized
PA	pyrrolizidine alkaloid
PAF	platelet activating factor
PCR	polymerase chain reaction
PEG	polyethylene glycol
PGE	prostaglandine E
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
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
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

ALCHEMILLAE HERBA

2013

Alchemilla / Lady's Mantle

DEFINITION

Alchemilla consists of the whole or cut, flowering aerial parts of *Alchemilla vulgaris* L. *sensu latiore*. It contains minimum 6.0 per cent of tannins, expressed as pyrogallol ($C_6H_6O_3$; M_r 126.1) (dried drug). The material complies with the European Pharmacopoeia [EP].

Note: A synonym for *Alchemilla vulgaris* L. *sensu latiore* as stated in the European Pharmacopoeia definition is *Alchemilla xanthochlora* Rothm. [Blaschek 2009].

CONSTITUENTS

Ellagitannins (5-8%), principally the dimers agrimoniin (3.5-3.8%) and laevigatin F (0.9%) and the monomer pedunculagin (1.2%) as determined by HPLC [Geiger 1990, 1991, 1994; Moeck 2007; Bradley 2006; Blaschek 2009]. Use of the pharmacopoeial method for tannin determination yielded contents of up to 15% in the herb [Lamaison 1990; Schimmer 1992; Scholz 1994; Fraisse 1999].

Flavonol glycosides (2.2-2.5% in leaves, 1.0-1.9% in flowers), mainly quercetin 3-glucuronide, quercetin 3-glucoside (isoquercitrin), 3-rutinoside (rutin) and 3-arabinoside as well as kaempferol 3-(6″-p-coumaryl)-glucoside [Lamaison 1991; Schimmer 1992; D'Agostino 1998; Fraisse 2000; Bradley 2006, Blaschek 2009]. Approximately 3 % leucocyanidin in the flowers [Moeck 2007].

Essential oil, phytosterols and aliphatic hydrocarbons [Schimmer 1992; Bradley 2006].

CLINICAL PARTICULARS

Therapeutic indications

As an adjuvant in non-specific diarrhoea, gastrointestinal complaints and dysmenorrhoea [Schimmer 1992; Scholz 1994; Jänicke 2003; Bradley 2006; Gerlach 2007, Schilcher 2007; Moeck 2007; Blaschek 2009].

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

Posology and method of administration

Dosage

Adult daily dose:

Internal use:

2-4 g of dried drug as an infusion or equivalent preparation three times daily [Schimmer 1992; Jänicke 2003; Bradley 2006; Moeck 2007; Blaschek 2009].
2-3 ml liquid extract (1:1, 25% ethanol) three times daily [Bradley 2006].

Method of administration

For oral administration.

Duration of administration

No restriction. If diarrhoea persists or worsens, medical advice should be sought.

Contraindications

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
In accordance with general medical practice, the product should not be used during pregnancy and lactation without medical advice.

Effects on ability to drive and use machines
None known.

Undesirable effects
None reported.

Overdose
No toxic effects reported.

PHARMACOLOGICAL PROPERTIES

Pharmacodynamic properties

Due to the high content of tannins Alchemilla has an astringent effect [Moeck 2007; Blaschek 2009].

In vitro experiments

Antibacterial activity
Various aqueous and ethanolic extracts showed antibacterial activity against *Staphylococcus aureus* and *Bacillus subtilis* [Schimmer 1992].

Astringent activity
The antisecretory activity of a lyophilized hot water extract from *Alchemilla xanthochlora* was examined using isolated rabbit colon. A significant effect could not be demonstrated [Geiger 1994].

The astringency of ellagitannins isolated from *Alchemilla xanthochlora* was determined by haemanalysis with fresh human blood and by their relative affinity to methylene blue. Agrimoniin, pedunculagin and laevigatin F showed the highest activity [Geiger 1991, 1994].

Antioxidant activity
Aqueous and ethanolic extracts of Alchemilla (20 mg powder/10 ml solvent) were tested for their ability to inhibit lipid peroxidation in phosphatidylcholine liposomes by the thiobarbituric acid (TBA) test using butylhydroxytoluene as reference. Inhibition was demonstrated for 3, 10 and 30 µl of the aqueous extract while the ethanolic extract was not active The superoxide anion scavenging activity of the same preparations were tested in the NADH-phenazine methosulfate system. Doses of 10, 30 and 40 µl of the aqueous extract showed a dose-dependent effect [Filipek 1992].

Antioxidant activity was measured by the ABTS assay, and the total polyphenol content was assayed using the Folin-Ciocalteu reagent. An extract from Alchemilla (0.5 g/100 ml water) exhibited higher antioxidant activity expressed as Trolox equivalents (4.79 ± 0.14 mM) than *Ilex paraguariensis* (3.50 ± 0.29 mM) [Kiselova 2006].

A 50 % ethanolic extract demonstrated antioxidant activity by inhibiting H_2O_2-induced cytotoxicity (47.0 ± 3%) and DNA damage (37.2 ± 3.6%) as well as in the DPPH assay (71.8 ± 4.1%) and an Fe^{2+} chelating assay (84.6 ± 3.8%). The same extract decreased bacteriostatic and bactericidal effects of H_2O_2 on *Escherichia coli* and caused an increase in expression of the H_2O_2-inducible gene *katG*, measured by the activity of β-galactosidase in *E. coli* cells [Oktyabrsky 2009].

Anti-inflammatory activity
An aqueous lyophilized extract of Alchemilla did not show inhibitory activity on prostaglandin biosynthesis in bovine seminal vesicle microsomes with ^{14}C-arachidonic acid (reference indometacin). The same extract was tested for its platelet-activating factor (PAF)-induced exocytosis in neutrophils using SAAVNA (0.2 mM) as a substrate and produced an inhibition of 91 ± 4 % [Tunon 1995].

In the hen's egg chorioallantoic membrane (HET-CAM) assay two dry hydroethanolic extracts (lyophilized mother tinctures, not further specified) at a concentration of 500 µg/pellet inhibited membrane irritation by 91 and 100%. The effect was comparable to that of hydrocortisone, phenylbutazone or diclofenac sodium at 50 µg/pellet [Paper 1997].

An Alchemilla fraction consisting of flavone monoglycosides at a concentration of 0.16 mg/ml inhibited 50% of the activity of porcine pancreatic elastase against the substrate N-succinyl-L-alanyl-L-alanine-L-valine-p-nitroanilide (SAAVNA). The inhibitory activity on trypsin and α-chymoptrypsin was less pronounced [Jonadet 1986]. Extracts (25 µg/ml, ethanol 50% V/V) of both flowers and leaves inhibited elastase by 94% [Lamaison 1990].

Antispasmodic activity
A 50% V/V methanolic extract did not show an effect on spontaneous or acetylcholine- or barium chloride-induced contractions of isolated guinea pig ileum at concentrations up to 800 µg/ml [Izzo 1996].

Wound-healing properties
The effects of an Alchemilla fluid extract (3% in glycerol) on cell growth were investigated in Chang Liver and Madin Darby Bovine Kidney (MDBK) epithelial cell lines and in rat aortic myofibroblast cultures. Cell numbers increased with 0.1 - 1% of the extract, attaining 21.3 ± 2.1%, 15.5 ± 2.25% and 10.6 ± 0.6% in MDBK, myofibroblast and Chang liver cells, respectively ($p<0.005$). No morphological changes or cytotoxicity were noted [Shrivastava 2007].

In vivo experiments

Angioprotective effects
An Alchemilla extract rich in flavone monoglycosides was subjected to the capillary permeability test in male rats using the Evans Blue diffusion chamber. At doses of 30 and 60 mg/kg body weight (i.p.), angioprotection significantly ($p<0.001$) increased by 28.0 and 30.1%, respectively. Another fraction consisting of flavone diglycosides showed a non-significant increase [Jonadet 1986].

Haemorheological effects
In 16 spontaneously hypertensive male rats, and 8 female Wistar rats, with arterial hypertension and increased blood viscosity, the effects of an Alchemilla extract (standardised on flavonoids, not further specified) on the structure and function of erythrocytes were examined. The extract was administered intragastrically at a daily dose of 300 mg/kg body weight for 10 days. It had a positive effect on erythrocyte surface morphology as well as on the lipid composition of erythrocyte membranes. Furthermore, the administration of the extract improved erythrocyte deformability [Plotnikov 2006].

Wound-healing properties
The effect of an Alchemilla fluid extract (3% in glycerol) on cell growth was investigated using dorsal skin lesions (8 mm diameter) in adult male rats. The lesions treated topically with

the extract significantly decreased in size by 10.0 ± 0.7% ($p<0.005$) after 2 days of treatment. On day 3 of treatment, the diameter of the lesions was significantly reduced by 15.9 ± 1.1% in glycerine-treated rats compared with distilled water ($p<0.005$), whereas the diameter in verum-treated rats was further reduced by 23.2 ± 1.4% ($p<0.005$) [Shrivastava 2007].

Other effects
The effects of Alchemilla dried leaves and decoction on glucose homoeostasis were evaluated in normal and streptozotocin diabetic mice. The plant material was supplied ad libitum in the diet (6.25% body weight) and additionally as a decoction (1 g/400 ml water) instead of drinking water. After 12 days of administration the animals were challenged with streptozotocin (200 mg/kg b.w. i.p.). Alchemilla did not prevent the development of hyperphagia, polydipsia, body weight loss, hyperglycaemia and hypoinsulinaemia [Swanston-Flatt 1990].

Eight-day-old chicks received i.p. injections of a hydroalcoholic Alchemilla extract (not further specified) 30 minutes before being tested in the presence of two other chicks, or in isolation, for a 3-minute observation period. Sedation, separation-distress and stress-induced analgesia were not changed significantly after application of the extract [Sufka 2001].

The effect of a polyphenol-containing fraction (not further specified) from Alchemilla on the morphofunctional state of the thyroid was examined in rats. The animals were fed with 10 mg/kg b.w. of this extract by gastric tube and then were exposed to cold air (minus 10°C). Enhanced synthesis and an increase in peripheral de-iodated thyroid hormones were observed in both the treatment and the control group. After a subsequent "readaptation phase" at room temperature, the control group showed a compensatory reduction of thyroid function whereas in the treatment group hormone synthesis was stimulated [Borodin 1999].

Clinical data

An open-label study involving 48 otherwise healthy male and female patients (4-44 years of age) examined the effects of a gel containing an Alchemilla fluid extract (3% in glycerol) on common minor oral ulcers. The gel was applied topically three times daily. In 60.4 % of the patients discomfort was relieved and complete healing was achieved within 2 days. In 75 % of the patients, healing was achieved within 3 days, as compared to 15 % without treatment and 40 % with usual treatment (not further specified) [Shrivastava 2006].

Pharmacokinetic properties
No data available.

Preclinical safety data
In the Ames test with *Salmonella typhimurium* strains TA 98 and TA 100, an Alchemilla tincture (1:5, ethanol 70%, species not defined) showed no mutagenicity without activation and weak mutagenicity at a concentration of 40 µl/plate after activation with S9 mix [Schimmer 1988, 1994]. The latter effect is supposed to be caused by quercetin and does not seem to be clinically relevant as Alchemilla preparations have only a low quercetin content [Schimmer 1988].

Hydroethanolic extracts (DER 1:5) from *A. mollis* and *A. alpina* (50% ethanol), and *A. vulgaris* (70% ethanol), were tested for their antimutagenic potency against 2-nitrofluorene as a standard mutagen. The experiments were performed with *Salmonella typhimurium* strains TA 98 and TA 100 without exogenous metabolic system. At doses of 80 and 160 µl/plate all preparations inhibited the induced mutagenicity. The extracts and tincture did not show any significant mutagenicity within the dose range tested [Schimmer 1995].

Clinical safety data
A gel containing an Alchemilla fluid extract (3% in glycerol) used topically on the oral mucosa in an open-label study in 48 patients (4-44 years of age) was well tolerated [Srivastava 2006].

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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	Supplement 2009
ALCHEMILLAE HERBA	Lady's Mantle	Online Series, 2013
ALLII SATIVI BULBUS	Garlic	Second Edition, 2003
ALOE BARBADENSIS	Barbados Aloes	Supplement 2009
ALOE CAPENSIS	Cape Aloes	Second Edition, 2003
ALTHAEAE RADIX	Marshmallow Root	Second Edition, 2003
ANGELICAE RADIX	Angelica Root	Supplement 2009
ANISI FRUCTUS	Aniseed	Second Edition, 2003
ARNICAE FLOS	Arnica Flower	Second Edition, 2003
BALLOTAE NIGRAE HERBA	Black Horehound	Supplement 2009
BETULAE FOLIUM	Birch Leaf	Second Edition, 2003
BOLDI FOLIUM	Boldo Leaf	Second Edition, 2003
CALENDULAE FLOS	Calendula Flower	Second Edition, 2003
CAPSICI FRUCTUS	Capsicum	Supplement 2009
CARVI FRUCTUS	Caraway Fruit	Second Edition, 2003
CARYOPHYLLI AETHEROLEUM	Clove Oil	Online Series, 2014
CENTAURII HERBA	Centaury	Second Edition, 2003
CENTELLAE ASIATICAE HERBA	Centella	Supplement 2009
CHELIDONII HERBA	Greater Celandine	Second Edition, 2003
CIMICIFUGAE RHIZOMA	Black Cohosh	Online Series, 2011
CINNAMOMI CORTEX	Cinnamon	Second Edition, 2003
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	Supplement 2009
ECHINACEAE PALLIDAE RADIX	Pale Coneflower Root	Supplement 2009
ECHINACEAE PURPUREAE HERBA	Purple Coneflower Herb	Supplement 2009
ECHINACEAE PURPUREAE RADIX	Purple Coneflower Root	Supplement 2009
ELEUTHEROCOCCI RADIX	Eleutherococcus	Supplement 2009
EUCALYPTI AETHEROLEUM	Eucalyptus Oil	Second Edition, 2003
FILIPENDULAE ULMARIAE HERBA	Meadowsweet	Second Edition, 2003
FOENICULI FRUCTUS	Fennel	Second Edition, 2003
FRANGULAE CORTEX	Frangula Bark	Second Edition, 2003
FUMARIAE HERBA	Fumitory	Supplement 2009
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	Supplement 2009
GRINDELIAE HERBA	Grindelia	Supplement 2009
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	Second Edition, 2003
JUNIPERI PSEUDO-FRUCTUS	Juniper	Second Edition, 2003
LAVANDULAE FLOS/AETHEROLEUM	Lavender Flower/Oil	Supplement 2009
LICHEN ISLANDICUS	Iceland Moss	Second Edition, 2003
LINI SEMEN	Linseed	Second Edition, 2003
LIQUIRITIAE RADIX	Liquorice Root	Second Edition, 2003

LUPULI FLOS	Hop Strobile	Second Edition, 2003
MALVAE FLOS	Mallow Flower	Supplement 2009
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	Second Edition, 2003
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	Second Edition, 2003
ORTHOSIPHONIS FOLIUM	Java Tea	Online Series, 2014
PASSIFLORAE HERBA	Passion Flower	Second Edition, 2003
PAULLINIAE SEMEN	Guarana Seed	Supplement 2009
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	Second Edition, 2003
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	Second Edition, 2003
RATANHIAE RADIX	Rhatany Root	Supplement 2009
RHAMNI PURSHIANI CORTEX	Cascara	Second Edition, 2003
RHEI RADIX	Rhubarb	Second Edition, 2003
RIBIS NIGRI FOLIUM	Blackcurrant Leaf	Second Edition, 2003
ROSAE PSEUDO-FRUCTUS	Dog Rose Hip	Supplement 2009
ROSMARINI FOLIUM	Rosemary Leaf	Second Edition, 2003
RUSCI RHIZOMA	Butcher's Broom	Second Edition, 2003
SALICIS CORTEX	Willow Bark	Second Edition, 2003
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	Second Edition, 2003
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
URTICAE FOLIUM/HERBA	Nettle Leaf/Herb	Second Edition, 2003
URTICAE RADIX	Nettle Root	Second Edition, 2003
UVAE URSI FOLIUM	Bearberry Leaf	Online Series, 2012
VACCINII MACROCARPI FRUCTUS	Cranberry	Supplement 2009
VALERIANAE RADIX	Valerian Root	Supplement 2009
VIOLAE HERBA CUM FLORE	Wild Pansy	Supplement 2009
VITIS VINIFERAE FOLIUM	Red Vine Leaf	Supplement 2009
ZINGIBERIS RHIZOMA	Ginger	Supplement 2009

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ISBN 978-1-901964-06-6