

List of ingredients

- FEED USE
- EXTERNAL USE



ESTRATTI PIANTE OFFICINALI

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 **DNA**[®]
CERTIFIED EXTRACTS

Our Quality Your Safety



EPO Srl is an independent company established in 1933, producing **high quality botanical extracts**. EPO can offer a great variety of products: dry, soft, fluid, glycolic, liposoluble extracts and tinctures, for **nutraceutical, pharmaceutical, cosmetic, food and feed** (feed materials and additives) industries.

EPO is certified according to UNI EN ISO 9001-2015, US 21CFR 111-117 for dietary supplements and ingredient, Kosher and for Organic products. Moreover, EPO was the first in Europe to launch a line of **DNA certified extracts**.



ESTRATTI PIANTE OFFICINALI

High-quality ingredients

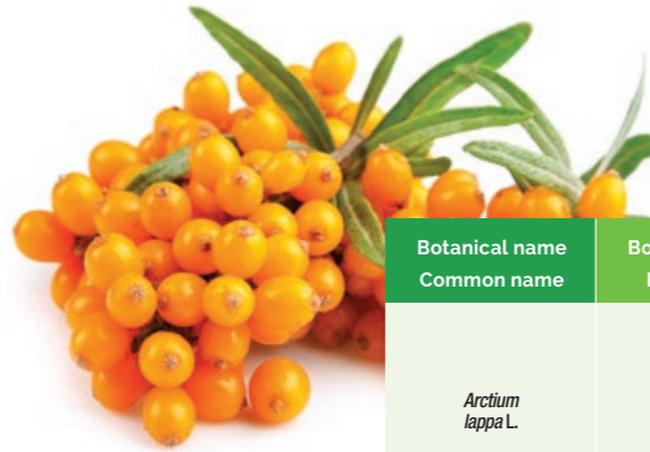
EPO Srl offers a wide range of plant extracts as ingredients to produce complete and complementary feed.

The EPO extracts are classifiable as:

- **Feed additives**, according to EC Regulation n. 1831/2003 (annex I and II) and subsequent updates, belonging to 'sensory additives' category with the only flavouring property (cat. 2b).
- **Feed materials** according to EC Regulation n. 1017/2017, 767/2009 and subsequent updates.



Warning - The information found in this catalogue refers to overall current knowledge and Regulations concerning plant extracts together with their applications in feed industry. Feed additives and materials included here comply with EC Reg. 1831/2003, 1017/2017, 767/2009 and subsequent updates; however, EPO Srl declines any responsibility on the incorrect end-use of the extracts outside aforementioned Regulations' framework and in case of improper use in species of animals not permitted by the Regulations. The information reported above, do not waive end user's obligations to identify and control the product in relation to intended use. EPO Srl assumes no liability for damages of any nature resulting from incorrect use of products and for their commercialization in extra-European markets where the regulatory classification may be different. It is always advisable to consult with a veterinarian, the only qualified healthcare provider, who can make a diagnosis, prescribe a therapy, and suggest a correct feed formulation.



FEED ADDITIVES (EC REG. 1831/2003)

Botanical name Common name	Botanical family Part of plant	Code	Type of extract	DNA 100% EPO	All species	Only for cat and dogs
<i>Arctium lappa</i> L. BURDOCK	Compositae (Asteraceae) Root	V3104702.RA	Dry extract ≥ 2.0 Inulin	 		
		V0104720.A	Fluid extract	 		
<i>Boswellia serrata</i> Roxb. ex. Colebr. BOSWELLIA	Burseraceae Gum resin	V3536765A.1	Dry extract 65% boswellic acid			
<i>Citrus paradisi</i> Macfad. GRAPEFRUIT	Rutaceae Seed	V3125910.A	Dry extract (GSE) ≥ 10.0 Bioflavonoids			
		V3125950.A	Dry extract (GSE) ≥ 50.0 Bioflavonoids			
<i>Curcuma longa</i> L. TURMERIC	Zingiberaceae Rhizome	V3012100.A	Dry extract DER 4/1	 		
<i>Cynara scolymus</i> L. ARTICHOKE	Compositae (Asteraceae) Leaf	V3107602.A	Dry extract ≥ 2.5 Chlorogenic acid	 		
		V0207620.A	Fluid extract	 		



Botanical name Common name	Botanical family Part of plant	Code	Type of extract	DNA	100% EPO	All species	Only for cat and dogs
<i>Echinacea angustifolia</i> DC. ECHINACEA (CONEFLOWER)	Compositae (Asteraceae) Root	V3512704.A	Dry extract ≥ 4.0 Echinacoside				
		V3512706.A	Dry extract ≥ 0.6 Echinacoside				
		V0112750.A	Fluid extract				
		V1812755.A	Tincture DER 10/1				
<i>Echinacea purpurea</i> (L.) Moench ECHINACEA PURPUREA (PURPLE CONEFLOWER)	Compositae (Asteraceae) Aerial part	V3156504.A	Dry extract ≥ 4.0 Total Polyphenols				
<i>Ginkgo biloba</i> L. GINKGO	Ginkgoaceae Leaf	V3516824.A	Dry extract ≥24.0 Tot. Ginkgoflavonoid 6.0 Terpenelactones <5ppm Ginkolic acid				
<i>Glycyrrhiza glabra</i> L. LICORICE	Leguminosae (Fabaceae)	V3119710.A	Dry extract ≥ 10.0 Glycyrrhizic acid				
	Root	V3119719.A	Dry extract ≥ 19.0 Glycyrrhizic acid				
<i>Harpagophytum procumbens</i> (Burch.) DC. DEVIL'S CLAW	Pedaliaceae	V3503602.A	Dry extract ≥ 2.5 Arpagoside				
	Tuber of secondary roots	V0103620.A	Fluid extract				

Botanical name Common name	Botanical family Part of plant	Code	Type of extract	DNA	100% EPO	All species	Only for cat and dogs
<i>Matricaria chamomilla</i> L. (syn. <i>Chamomilla recutita</i> (L.) Rausch., <i>Matricaria recutita</i> L.) GERMAN CHAMOMILE	Compositae (Asteraceae) Inflorescence (head)	V3506900.A	Dry extract ≥ 0.3 Total Apigenin				
		V3506912.A	Dry extract ≥ 1.2 Total Apigenin				
<i>Melissa officinalis</i> L. LEMON BALM	Lamiaceae (Labiatae) Leaf	V3021302S.A	Dry extract ≥ 2.0 Rosmarinic acid				
		V3021304S.A	Dry extract ≥ 4.0 Rosmarinic acid				
<i>Panax ginseng</i> C.A. Meyer GINSENG	Araliaceae Root	V3816903.A	Dry extract ≥ 3.0 Ginsenosides				
		V3516905.A	Dry extract ≥ 5.0 Ginsenosides				
<i>Passiflora incarnata</i> L. PASSION HERB	Passifloraceae Flowering herb	V3124400.A	Dry extract ≥ 0.5 Tot. Flav. as Vitexin				

Botanical name Common name	Botanical family Part of plant	Code	Type of extract	DNA 100% EPO	All species	Only for cat and dogs
<i>Peumus boldus</i> Molina BOLDO	Monimiaceae Leaf	V3105701.A	Dry extract ≥ 0.05 Tot. Alkal. as Boldine			
<i>Ribes nigrum</i> L. BLACKCURRANT (CASSIS) BERRY	Grossulariaceae (Saxifragaceae) Fruit (berry)	V3848201.A	Dry extract > 1.0 Tot. Anthocyanosides			
<i>Rosmarinus officinalis</i> L. ROSEMARY	Lamiaceae (Labiatae) Leaf	V3028300.A	Dry extract DER 4/1			
<i>Taraxacum campyloides</i> G.E. Haglund (<i>Taraxacum officinale</i> (L.) Weber ex F.H.Wigg.) DANDELION	Compositae (Asteraceae) Root	V3031002.A	Dry extract ≥ 2.0 Inulin			
<i>Trigonella foenum-graecum</i> L. FENU GREEK	Leguminosae (Fabaceae) Seed	V3014800.A	Dry extract DER 4/1			
<i>Valeriana officinalis</i> L. VALERIAN	Caprifoliaceae (Valerianaceae) Rhizome and root	V3532200.A	Dry extract ≥ 0.42 Valerenic acids			
<i>Zingiber officinale</i> Roscoe GINGER	Zingiberaceae Rhizome	V3033700.A	Dry extract ≥ 1.0 Gingerols			

FEED MATERIALS

(EC REG. 1017/2017, 767/2009)

Botanical name Common name	Botanical family Part of plant	Code	Type of extract	DNA 100% EPO
<i>Aloe barbadensis</i> Mill. (syn. <i>Aloe vera</i> (L.) Burm.f.) ALOE	Xanthorrhoeaceae (Liliaceae) Gel	V7337502E.M	Powder gel 200:1 < 0,1 Barbaloin	
<i>Propolis cera</i> PROPOLIS	Resinous mixture collected by bees from botanical sources	3526202	Dry extract ≥ 2.5 Tot. Flav. as Galangine (HPLC)	
		0226280	Fluid extract	



FEED FORMULATION SUGGESTIONS INTENDED FOR PARTICULAR NUTRITIONAL PURPOSES



URINARY TRACT



GASTROINTESTINAL SYSTEM



LIVER



OSTEOARTICULAR SYSTEM



METABOLISM



CARDIOVASCULAR SYSTEM



SKIN AND APPENDAGES



BEHAVIOR



Formulation suggestions concerning feed for particular nutritional purposes

EC Reg. 354/2020 establishes a list of intended uses of feed intended for particular nutritional purposes. In compliance with this list, in this section, plant extracts suitable as organoleptic additives (Reg. CE 1831/2003 cat.2b) have been associated with nutritional purposes as formulation suggestions for complete and complementary feed.

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URINARY TRACT

Particular nutritional purpose (EC Reg. 354/2020)	Species or category of animal	Feed application	Summary of the feed essential nutritional characteristics (EC Reg. 354/2020 annex B)	Examples of plant extracts suitable as organoleptic additives (EC Reg. 1831/2003 cat. 2b)
Support of renal function in case of chronic renal insufficiency	Dogs and cats	Complete and complementary feed	High quality proteins and reduced intake of phosphorus Reduced phosphorus absorption by means of incorporation of Lanthanum carbonate octahydrate	Boldo Burdock* Dandelion Echinacea* Grapefruit Rosemary
	Equines	Complementary feed	High density of energy, starch sources, restricted protein level	
Reduction of oxalate stones formation	Dogs and cats	Complete and complementary feed	Low level of calcium, low level of vitamin D and urine alkalisising properties	
Reduction of cystine stones formation	Dogs and cats	Complete feed	Urine alkalinising properties, proteins selected for a limited cystine and cysteine content	
Reduction of urate stones formation	Dogs and cats	Complete feed	Low level of crude protein	
Dissolution of struvite stones (for cats: feline urological syndrome - FUS)	Dogs and cats	Complete feed	Urine undersaturating properties for struvite and/or urine acidifying properties	
Reduction of struvite stone recurrence	Dogs and cats	Complete feed	Urine undersaturating or metastabilising properties for struvite and/or diet with urine acidifying properties	
Reduction of the risk of urinary calculi	Ruminants	Complete and complementary feed	Low level of phosphorus, magnesium, and urine acidifying properties	

*only for dogs and cats

GASTROINTESTINAL SYSTEM

Particular nutritional purpose (EC Reg. 354/2020)	Species or category of animal	Feed application	Summary of the feed essential nutritional characteristics (EC Reg. 354/2020 annex B)	Examples of plant extracts suitable as organoleptic additives (EC Reg. 1831/2003 cat. 2b)
Compensation for maldigestion	Dogs and cats	Complete feed	Highly digestible diet	Boldo Artichoke Ginseng* Boswellia
Reduction of intestinal absorptive disorders	Dogs and cats	Complete and complementary feed	Highly digestible ingredient sources including sodium and potassium	Boldo Boswellia
Reduction of acute intestinal absorptive disorders - during periods of and recovery from acute diarrhoea	Dogs and cats	Complementary feed	Increased level of electrolytes (sodium and potassium) and highly digestible carbohydrates	Boswellia
Compensation for chronic insufficiency of small intestine function	Equines	Complete and complementary feed	Low level of starch	Boswellia
Compensation for chronic insufficiency of small intestine function	Equines	Complete and complementary feed	Highly digestible fibres, high quality protein sources and low level of total sugar	Boswellia
Stabilisation of the physiological digestion	Animal species for which the gut flora stabiliser or micro-organism is authorised	Complete and complementary feed	Feed additives of the functional group 'Gut flora stabiliser' and/or of micro-organism (EC Reg. 1831/2003)	Artichoke
Reduction of the risk of constipation	Sows	Complete and complementary feed	Ingredients stimulating intestinal passage	Artichoke Boldo Dandelion

*only for dogs and cats

LIVER

Particular nutritional purpose (EC Reg. 354/2020)	Species or category of animal	Feed application	Summary of the feed essential nutritional characteristics (EC Reg. 354/2020 annex B)	Examples of plant extracts suitable as organoleptic additives (EC Reg. 1831/2003 cat. 2b)
Support of liver function in the case of chronic liver insufficiency	Dogs and cats	Complete feed	Selected protein sources and moderate level of protein	Artichoke Boldo Burdock* Dandelion Ginseng* Rosemary Turmeric
	Equines	Complete and complementary feed	Low level of protein but of high quality and highly digestible carbohydrates	
Reduction of the risk of fatty liver syndrome	Laying hens	Complete and complementary feed	Low energy and high proportion of metabolisable energy from lipids with high level of polyunsaturated fatty acids	

*only for dogs and cats

OSTEOARTICULAR SYSTEM

Particolare fine nutrizionale (Reg. CE 354/2020)	Specie o categoria di animali	Tipologia di applicazione	Riassunto delle caratteristiche nutrizionali essenziali del mangime (Reg. CE 354/2020 annex B)	Examples of plant extracts suitable as organoleptic additives (EC Reg. 1831/2003 cat. 2b)
Support of the metabolism of joints in the case of osteoarthritis	Dogs	Complete and complementary feed	Total omega-3 fatty acids and adequate levels of vitamin E	Boswellia Devil's claw Ginger Turmeric
	Cats		Total omega-3 fatty acids, increased levels of methionine and manganese and adequate levels of vitamin E	

METABOLISM

Particular nutritional purpose (EC Reg. 354/2020)	Species or category of animal	Feed application	Summary of the feed essential nutritional characteristics (EC Reg. 354/2020 annex B)	Examples of plant extracts suitable as organoleptic additives (EC Reg. 1831/2003 cat. 2b)
Regulation of glucose supply (Diabetes mellitus)	Dogs and cats	Complete feed	Low level of total sugars	Boswellia Fenu greek
Nutritional restoration, convalescence	Dogs and cats	Complete and complementary feed	Highly digestible ingredients with energy density ≥ 3520 kcal and specific crude protein level	Artichoke Boldo Echinacea* Ginseng* Grapefruit Rosemary
Support of lipid metabolism in the case of hyperlipidaemia	Dogs and cats	Complete feed	Low level of fat	Artichoke Boldo Fenu greek Ginseng* Licorice Rosemary
Reduction of excessive body weight	Dogs and cats	Complete feed	Low level of metabolizable energy	Fenu greek Turmeric
Support the preparation for and recovery from sport effort	Equidae	Complete and complementary feed	High level of selenium and a minimum content of vitamin E	Boswellia Devil's claw Ginger Ginkgo Grapefruit Turmeric
Support of energy metabolism and of the muscle function in the case of rhabdomyolysis	Equines	Complete and complementary feed	Starch, sugar, crude fat and vitamin E	

*only for dogs and cats

CARDIOVASCULAR SYSTEM

Particular nutritional purpose (EC Reg. 354/2020)	Species or category of animal	Feed application	Summary of the feed essential nutritional characteristics (EC Reg. 354/2020 annex B)	Examples of plant extracts suitable as organoleptic additives (EC Reg. 1831/2003 cat. 2b)
Support of heart function in the case of chronic cardiac insufficiency	Dogs and cats	Complete feed	Restricted level of sodium	Ginger Ginkgo Ginseng* Rosemary Turmeric

*only for dogs and cats



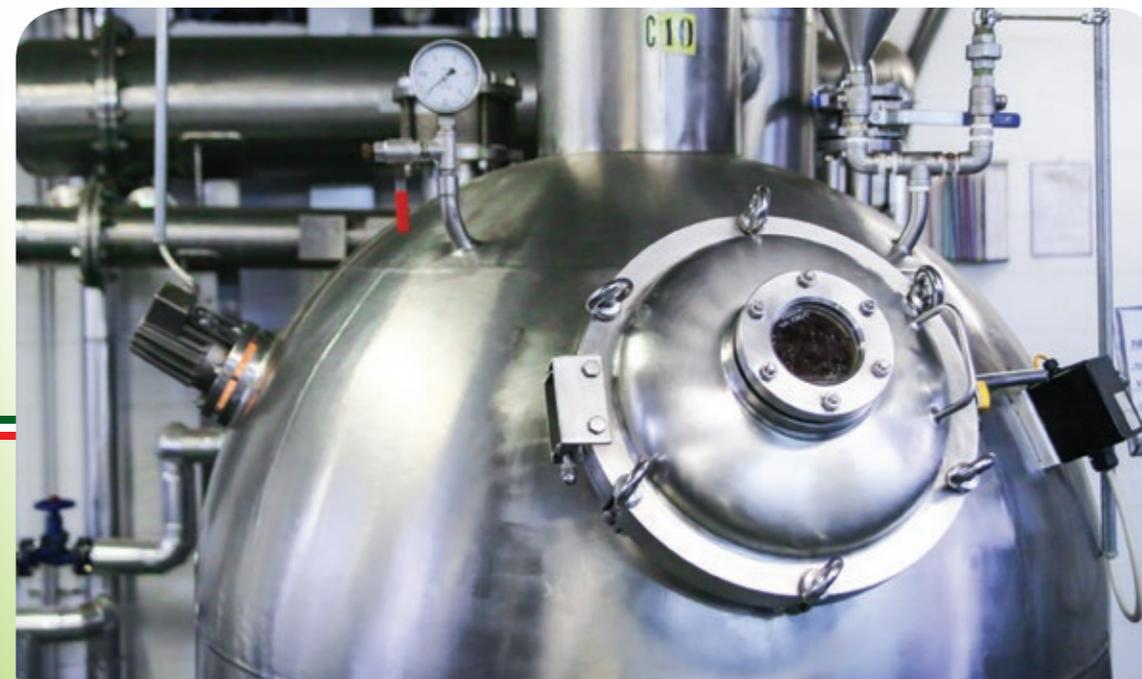
SKIN AND APPENDAGES

Particular nutritional purpose (EC Reg. 354/2020)	Species or category of animal	Feed application	Summary of the feed essential nutritional characteristics (EC Reg. 354/2020 annex B)	Examples of plant extracts suitable as organoleptic additives (EC Reg. 1831/2003 cat. 2b)
Support of skin function in the case of dermatosis and excessive loss of hair	Dogs and cats	Complete and complementary feed	High level of linoleic acid and sum of eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA)	Artichoke Blackcurrant Burdock* Ginseng* Turmeric
Support the regeneration of hooves, trotters and skin	Horses, ruminants and pigs	Complete and complementary feed	High level of zinc	
Support the regeneration of the skin and appendages	Mammals and poultry	Complete and complementary feed	Minimum supply of zinc compounds, high level of copper and/or iodine and/or selenium and/or vitamin B6 and/or vitamin E and/or vitamin A and/or methionine and/or cystine and/or minimum supply of biotin	

*only for dogs and cats

BEHAVIOR

Particular nutritional purpose (EC Reg. 354/2020)	Species or category of animal	Feed application	Summary of the feed essential nutritional characteristics (EC Reg. 354/2020 annex B)	Examples of plant extracts suitable as organoleptic additives (EC Reg. 1831/2003 cat. 2b)
Support in stressful situations, which will lead to the reduction of associated behaviour	Dogs	Complete feed	Addition of trypsin-hydrolysed bovine casein	Chamomile Lemon balm Passion herb Valerian
Reduction of stress reactions	Pigs	Complete and complementary feed	High level magnesium and/or highly digestible ingredients	

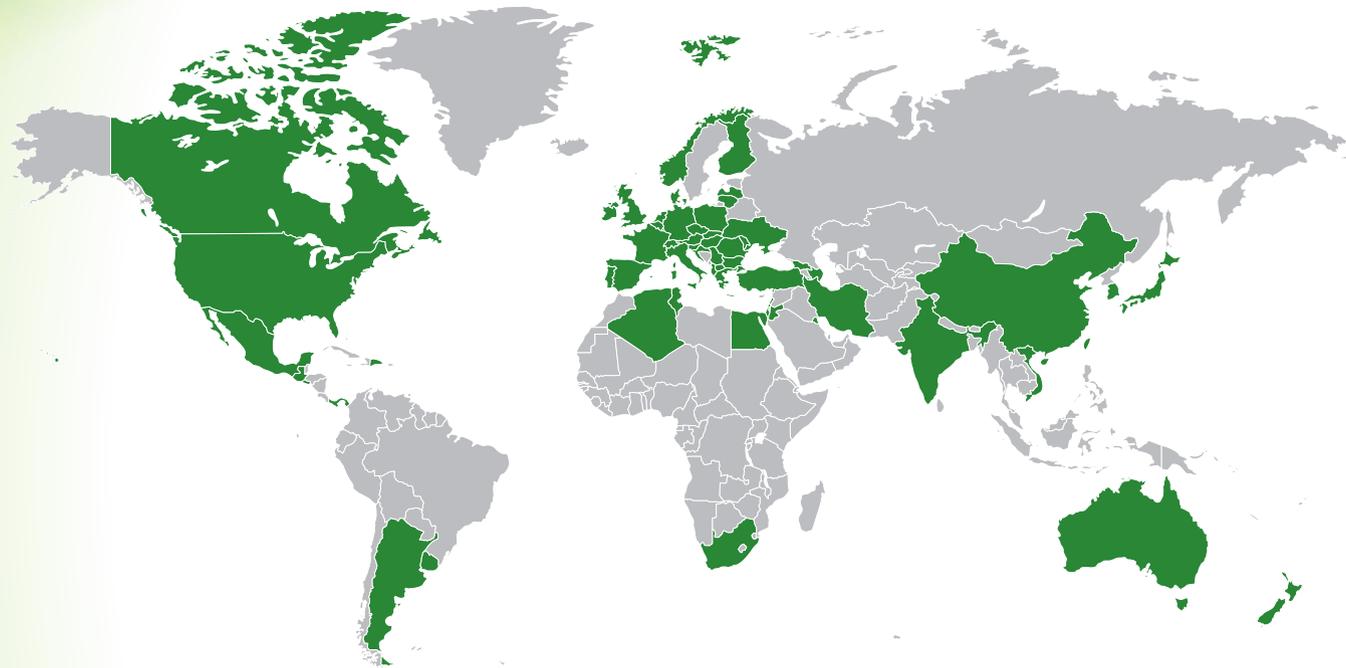


GLYCOLIC EXTRACTS FOR EXTERNAL USE

Botanical name Common name	Botanical family Part of plant	Functionality	Code	DNA 100% EPO
<i>Allium sativum</i> L. GARLIC	Amaryllidaceae (Liliaceae) Bulb	Skin conditioning.	4000700	
<i>Aloe barbadensis</i> Mill. (syn. <i>Aloe vera</i> (L.) Burm.f.) ALOE	Xanthorrhoeaceae (Liliaceae) Gel	Skin conditioning.	4037500	
<i>Arnica montana</i> L. et <i>Arnica</i> spp. ARNICA	Compositae (Asteraceae) Flower (head)	Masking, perfuming, skin conditioning.	4003300	
<i>Calendula officinalis</i> L. POT MARIGOLD	Compositae (Asteraceae) Flower (head)	Masking, perfuming, skin conditioning. Anti-acne.	4006600	
<i>Centella asiatica</i> (L.) Urban GOTU KOLA (CENTELLA, INDIAN PENNYWORT)	Apiaceae (Umbelliferae) Leaf	Skin conditioning.	4009200	
<i>Citrus paradisi</i> Macfad. GRAPEFRUIT	Rutaceae Seed	Masking, perfuming. Anti-ageing.	40S25900	
<i>Echinacea angustifolia</i> DC. ECHINACEA (CONEFLOWER)	Compositae (Asteraceae) Root	Skin conditioning, hair conditioning, nail conditioning. Wound healing.	4012700	

Botanical name Common name	Botanical family Part of plant	Functionality	Code	DNA 100% EPO
<i>Equisetum arvense</i> L. HORSE-TAIL	Equisetaceae Sterile aerial part	Astringent, emollient, soothing, tonic.	4010900	
<i>Hamamelis virginiana</i> L. WITCH-HAZEL	Hamamelidaceae Leaf	Skin conditioning. Anti-inflammatory for the skin and oral cavity (mouthwash and gargles).	4001700	
<i>Harpagophytum procumbens</i> (Burch.) DC. DEVIL'S CLAW	Pedaliaceae Tuber of secondary roots	Skin conditioning.	4003600	
<i>Matricaria chamomilla</i> L. (syn. <i>Chamomilla recutita</i> (L.) Rausch., <i>Matricaria recutita</i> L.) GERMAN CHAMOMILE	Compositae (Asteraceae) Inflorescence (head)	Masking, skin conditioning. Also used as hair reflexant.	4107000	
<i>Propolis</i> cera PROPOLIS	Resinous mixture collected by bees from botanical sources	Anti-seborrheic for topical use.	4126200	
<i>Urtica dioica</i> L. NETTLE	Urticaceae Leaf	Skin conditioning. Also used in seborrheic skin conditions.	4024000	
<i>Thymus vulgaris</i> L. COMMON THYME	Lamiaceae (Labiatae) Leaf	Skin conditioning.	4131500	

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