



Egyptian Herbal Monograph

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## Volume 3

## Herbal Formulations Used in Egypt

Egyptian Drug Authority (EDA)

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Marshmallow, Echinacea, Anise oil, Eucalyptus oil الختمية/ إشنسيا / زيت الينسون/ زيت الكافور

### 1. Names & Synonyms

**Marshmallow (1, 2).**

***Althaeaofficinalis* L.**

**Family:** Malvaceae.

**Syns.:** *Malva althaea* E. H. L. Krause, *Malva officinalis* (L.) K. F. Schimp. & Spenn. (3).

**Arabic:** Marshmallow مارشمالو, Al khatmia الختمية, الختمية, Al Khatmy الخطمي, Khairu خيرو (4).

**English:** Marshmallow, White-mallow (5).

**Echinacea (1,6,7)**

***Echinacea purpurea* L.**

**Moench. Family:** Asteraceae (Compositae).

**Syns.:** *Echinacea intermedia* Lindl., *E. purpurea* (L.) Moench var. *arkansana* Steyerem., *E. purpurea* var. *purpurea* f. *liggettii*, *E. speciosa* Paxt., *Brauneria purpurea* (L.) Britton, *Rudbeckia purpurea* L., *R. hispida* Hoffm., *R. serotina* Sweet.

**Arabic:** Echinacea إشنسيا

**English name:** Purple coneflower.

**Anise (8)**

***Pimpinella anisum* L.**

**Family:** Apiaceae (Umbelliferae).

**Syns:** *Anisum officinarum* Moench., *A. vulgare* Gaertn., *Apium anisum* L. Crantz., *Carum anisum* L. Baill., *Pimpinella anisum* cultum Alef., *P. aromatica* Bieb., *Selinum anisum* L. E.H.L. Krause., *Sison anisum* Spreng., *Tragium anisum* Link.

**Arabic:** Yansoon ينسون

**English:** Anise, Aniseed.



## Eucalyptus (3)

### *Eucalyptus globulus* Labill.

Family: Myrtaceae.

Syns.: *Eucalyptus maidenii* subsp. *globulus* (Labill.) J.B.Kirkp.

Arabic name: Kafur كافور (9).

English name: Eucalyptus (10).

## 2. Parts used for medicinal purpose

**Marshmallow:** Peeled or unpeeled dried root (1, 2, 11-13) and leaves (1, 5).

**Echinacea:** Fresh or dried herb (aerial parts) (1,6), Rhizome/ root (1,7).

**Anise oil:** Dry ripe fruits (8).

**Eucalyptus oil:** Fresh /dried leaves (10,14).

## 3. Major chemical constituents

### Marshmallow

- **Acidic polysaccharides:** Mucilage (galacturono-rhamnans, arabinans, glucans, arabinogalactans) (1, 15).
- **Flavonoids:** Hypolaetin-8-glucoside, isoquercitrin, kaempferol (16).
- **Phenolic acids:** Caffeic, *p*-coumaric, ferulic, *p*-hydroxybenzoic and syringic acids (1, 15).
- **Others:** Starch, pectin, asparagine, calcium oxalate, coumarins (scopoletin), sucrose, amino acids and tannins (1, 15,16).

### Echinacea

#### Root:

- **Phenylpropanoids: Caffeic acid esters;** cichoric acid, caftaric acid, chlorogenic and isochlorogenic acids and **caffeic acid glycosides;** echinacoside, verbascoside, caffeoylechinacoside (17).
- **Alkamides:** Isobutylamides of straight-chain fatty acids with olefinic and/or acetylenic bonds contain mainly 2,4-dienoic units (1,17).



- **Polysaccharides:** Methylglucuroarabinoxylan, rhamnoarabinogalactan, xyloglucan and glycoproteins; arabinogalactan-protein (protein has high concentrations of serine, alanine and hydroxyproline) (1).
- **Others: Polyacetylene (volatile oil components):** Alkylketones; (1,14) saturated pyrrolizidine-type **alkaloids** (tussilagine and isotussilagine) (1,14); **flavonoids** (quercetin, kaempferol, isorhamnetin and their glycosides; betaine, fatty acids, simple sugars, sterols and vanillin (1).

**Herb/aerial parts:**

- **Phenylpropanoids: Caffeic acid esters;** cichoric acid, caftaric acid, chlorogenic and isochlorogenic acids, and **caffeic acid glycosides;** echinacoside, verbascoside, caffeoylechinoside (14).
- **phenolic acids:** *p*-coumaric, *p*-hydroxybenzoic and protocatechuic acids; betaine (1).
- **Flavonoids:** quercetin, kaempferol, isorhamnetin and their glycosides (1,18).
- **Alkamides:** Isobutylamides of straight-chain fatty acids with olefinic and/or acetylenic bonds contain mainly 2,4-dienoic units (1,14).
- **Polysaccharides:** Methylglucuroarabinoxylan, rhamnoarabinogalactan, xyloglucan and glycoproteins; arabinogalactan-protein (protein has high concentrations of serine, alanine and hydroxyproline) (1).
- **Others: volatile oil components;** borneol, bornyl acetate, germacrene D and caryophyllene (1,14), saturated pyrrolizidine-type alkaloids (tussilagine and isotussilagine) (1,14), anthocyanins, fatty acids, simple sugars, sterols and vanillin (1).

**Anise oil:** contains mainly trans-anethole, estragole (methylchavicol, isoanethole),  $\beta$ -anisaldehyde,  $\alpha$ -terpenol, *cis*-anethole (8).

**Eucalyptus oil:** 1,8-Cineole (eucalyptol), *p*-cymene,  $\alpha$ -pinene and  $\alpha$ -limonene (19).



#### 4. Medicinal Uses (Indications)

Symptomatic relief of common cold and as a demulcent preparation for the symptomatic treatment of upper respiratory tract irritation and associated dry cough.

#### 5. Herbal preparations correlated to medicinal use

Combination of marshmallow aqueous powder extract, echinacea powder extract (Extraction solvent: hydroalcoholic), anise oil and eucalyptus oil.

**Herbal preparations are in pharmaceutical dosage forms. The pharmaceutical form should be described by the pharmacopoeia full standard term.**

#### 6. Posology and method of administration correlated to medicinal use

**Adolescents & adults (12 years old and above):** Combination of 400mg of marshmallow extract, 100mg of echinacea extract, 60mg of anise oil and 60mg of eucalyptus oil. 3 times daily

**Children (4– 12 years old):** Combination of 100mg of marshmallow extract, 25mg of echinacea extract, 15mg of anise oil and 15mg of eucalyptus oil. Twice daily with medical advice.

##### **Duration of use :**

- The therapy should start at the first signs of a common cold.
- If the symptoms persist longer than one week during the use of this medicinal product, a doctor or a pharmacist should be consulted.
- Not to be taken for more than 10 days.

**Method of administration :** Oral use.

#### 7. Contraindications.

- Hypersensitivity to the active substances and to other plants of the same families.



- Progressive systemic disorders, collagen disease, tuberculosis, immunodeficiencies (HIV/AIDS), immunosuppression diseases of white blood cell system, and autoimmune diseases such as lupus erythematosus and multiple sclerosis (7,17,20).

## 8. Special warnings and precautions for use

- If the symptoms worsen or if dyspnea, fever or purulent sputum occurs during the use of the medicinal product, a doctor or a pharmacist should be consulted.
- There is a possible risk of allergic reactions in sensitive individuals. Those patients should consult their doctor before using the product (17).
- There is a possible risk of anaphylactic reactions in atopic patients. Atopic patients should consult their doctor before using the product (17).
- The product should be used with caution in inflamed and ulcerated conditions of the gastrointestinal tract, gall bladder disease or impaired liver function (14).
- Absorption of concomitantly administered medicines may be delayed. As a precautionary measure, the product should not be taken ½ to 1 hour before or after intake of other medicinal products (2,11).
- Use in children from 4 years to 12 years of age is not recommended without medical supervision.

## 9. Interactions with other medicinal products and other forms of interaction (7)

- Oral medications: It may reduce the absorption of oral medications; concurrent use should be avoided (2, 21).
- Antidiabetics and Hypoglycemic herbs: The product may increase hypoglycemic action.
- Warfarin: The product may increase the action of warfarin.
- It may inhibit cytochrome P4503A4 enzymes.
- The action of Econazole vaginal cream may be decreased; concurrent use should be avoided.



- It may decrease the effects of immunosuppressants, protease inhibitors, corticosteroids and should not be used immediately before, during, or after transplant

**Lab Tests:**

- Blood glucose: It may decrease blood glucose.
- Prothrombin time (PT/INR): It may increase Prothrombin time (PT/INR).

### 10. Fertility, pregnancy and lactation

- The use during pregnancy and lactation is avoided (22).
- No fertility data available.

### 11. Effects on ability to drive and use machines

No studies on the effect on the ability to drive and use machines have been performed.

### 12. Undesirable effects (7)

- Occasional allergic reactions affecting the skin, respiratory system and gastrointestinal tract e.g., nausea and vomiting (8,22).
- Hypoglycemia, anorexia, vomiting, and hypersensitivity reactions.
- Hypermineralocorticoidism.
- Hepatotoxicity, acute asthma attack, anaphylaxis and angioedema may occur.
- If adverse effects occur, a doctor or a pharmacist should be consulted.

### 13. Overdose

No case of overdose has been reported.

### 14. Relevant biological activities

Not required as per Egyptian guidelines for registration of herbal medicines.

### 15. Additional information



## 16. Date of compilation/last revision

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