

Egyptian Herbal Monograph

Volume 3

Medicinal plants used in Egypt

Egyptian Drug Authority (EDA)

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Arnica montana L.

زهرة الأرنیکا

1. Names & Synonyms (1)

Arnica montana L.

Syns.: *Doronicum oppositifolium* Lam.

Family: Asteraceae (Compositae)

Arabic: Zahret El-arnica, زهرة الأرنیکا

English name: Arnica flower, (2), Leopard's bane, Mountain tobacco and Wolf's bane (3, 4).-

2. Parts used for medicinal purpose

- Fresh/ dried flower (2-6)

3. Major chemical constituents

- **Sesquiterpene lactones:** Helenalin, and dihydro-helenalin (7).
- **Essential oil:** Sesquiterpene hydrocarbons (e.g., E-caryophyllene, germacrene D, α -humulene, bicyclogermacrene), oxygenated monoterpenoids (e.g., 1,8-cineole, linalool), oxygenated sesquiterpenoids (e.g., caryophyllene oxide, α -cadinol), and phenyl derivative compounds (e.g., 2,5-dimethoxy-*p*-cymene, thymol methyl ether, *p*-methoxyheptanophenone and 2,6-diisopropylanisole) (8).
- **Phenolic compounds:** Chlorogenic, 3,5-dicaffeoylquinic and 1-methoxyoxaloyl 3,5-dicaffeoylquinic acids (7).
- **Flavonoids:** Flavones (luteolin, luteolin 7-O-glucoside, apigenin and apigenin 7-O-glucoside), flavonols (kaempferol and astragalol (kaempferol 3-O-glucoside)), hyperoside (quercetin 3-O-galactoside), quercetin, isoquercetin (quercetin-3-O-glucoside) and isorhamnetin (7).
- Others:** Amino acids, arnicin (4), tussilagine and isotussilagine, umbelliferone, scopoletin (9), carotenoids, fatty acids, phytosterols, polyacetylenes and resin (4).

4. Medicinal Uses (Indications)

- Relieve pain and/or inflammation in muscles and joints (such as sprains, bruises and/or joint pain) (2,3,5,10,11).

5. Herbal preparations correlated to medicinal use

- 1) Herbal substance is added to hot water in the form of infusion (5,11) or decoction (4).
- 2) Tincture (2):
 - 2.1 Tincture (1:10), extraction solvent: Ethanol 70%.
 - 2.2 Tincture (1:10), extraction solvent: Ethanol 60%.
 - 2.3 Tincture (1:5), extraction solvent: Ethanol 60%.
- 3) Liquid extract of fresh flowers, extraction solvent: Ethanol 50% (2).
- 4) Oil extract of one part herb and five parts fatty oil (5, 11).

Herbal preparations are in semi-solid and liquid 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 and elderly

Preparation 1

2 g per 100 ml of water as a decoction or infusion (4,5,11), 3 – 4 times, daily (5).

Preparation 2 (2)

Preparation 2.1: Semi-solid dosage form (20-25% tincture in base). Apply a thin layer on the affected area, 2 - 3 times daily.

Preparation 2.2: Liquid dosage form (2.5 ml as an impregnated dressing). Apply on the affected area, 3 - 4 times daily.

Preparation 2.3: Semi-solid dosage form (20% tincture in base). Apply a thin layer on the affected area, 2 - 3 times daily.

Preparation 3

Semi-solid dosage form (50% liquid extract in base). Apply a thin layer on the affected area, 2 - 4 times daily (2).

Preparation 4

Semi-solid dosage form (1 – 15% of oil in base). Apply a thin layer on the affected area, 3 – 4 times, daily (5).

Duration of use (2):

- If the symptoms persist after 3 - 4 days during the use of the medicinal product, a doctor or a pharmacist should be consulted.

Method of administration: Cutaneous use (2,5).



7. Contraindications

- Hypersensitivity to the active substance and to other plants of the same family (2).

8. Special warnings and precautions for use

- If the symptoms worsen during the use of the medicinal product, a doctor or a pharmacist should be consulted.
- The use in children under 12 years of age has not been established (2).
- The preparation should not be used on broken or open skin (2,6, 11-13).
- Contact with the eyes and mucous membranes should be avoided (5).
- Application on or near the nipple should be avoided (5).
- Excessive /prolonged use should be avoided. It may induce eczema, allergy-related skin rashes with itching, blister formation, ulcers and superficial necrosis (6, 11, 13).
- Prolonged use on damaged or injured skin or indolent leg ulcers may induce the formation of oedematous dermatitis with the formation of pustules (6,11).
- Application with external heat, such as an electric heating pad should be avoided, as this may result in excessive skin irritation or skin burn (5).
- Do not bandage the area after application (5).

9. Interactions with other medicinal products and other forms of interaction

None reported (2).

10. Fertility, pregnancy and lactation (2)

- Safety during pregnancy and lactation has not been established. In the absence of sufficient data, the use during pregnancy and lactation is not recommended.
- No fertility data available.

11. Effects on ability to drive and use machines (2)

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

12. Undesirable effects

- If adverse reactions occur, a doctor or a pharmacist should be consulted.
- Allergic reactions such as itching, redness of the skin and eczema may occur (2).
- In treatment involving higher concentrations of the drug, primary toxic skin reactions with formation of vesicles or even necroses may occur (11).



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 (5)**

Arnica is used in the form of the whole, cut or powder for infusion, extract and tincture. The pharmaceutical preparations of Arnica flower for external applications include semisolid preparations such as gel, ointment, cream as well as tincture, oil, plaster, compress and poultice.

Dilution:

- For tincture (1:10 extraction ratio): For each millilitre of tincture, dilute with 3-10 ml of water.
- For tincture (1:5 extraction ratio): For each millilitre of tincture, dilute with 5 ml of water.

16. **Date of compilation/last revision**

18/12/2023



هيئة الدواء المصرية

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