

Anatomy of *Aconitum napellus* L.: a new contribution to Brazilian Homeopathic Pharmacopoeia

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Background: *Aconitum napellus* L. (Ranunculaceae) is a toxic plant used in homeopathy. It is popularly known as aconite or helmet flower that grows in mountainous regions from Europe, Asia, and North America¹. The species is very known in Oriental Medicine, such as Chinese, Ayurveda, Siddha, and Unani traditional medicinal systems. Decoctions from this species are used as an analgesic, anti-inflammatory, cardiotonic and for treatments of asthma, vomiting, and diarrhoea². There are few reports and not complete anatomies studies in which the botanic characteristics of herbal raw material are described, and the present study highlights the importance of botanical markers in the quality control of herbal homeopathic drugs. **Aims:** to contribute with botanic parameters of *Aconitum napellus* to Brazilian Homeopathic Pharmacopoeia. **Methodology:** Roots, stems, leaves and flowers of *Aconitum napellus*, harvested in Swiss Alps (Arosa, Grisson's mountains) were analyzed by light and scanning electron microscopy. **Results and discussion:** The roots are rounded with suber formed by 1-4 layers of cells and a cortical parenchyma containing starch grains and few stone cells; the endoderm is formed by elongated cells and the walls are suberized. The vascular cambium forms a characteristic cross. Perivascular fiber caps adjoin the phloem. The stems have an irregular shape. The epidermis is unilayered and is covered by a striate and thin cuticle. Collenchyma is formed by 2-3 layers of cells. The leaves are hypostomatic and dorsiventral. Non-glandular trichomes are present only on the abaxial side. Sepals, in frontal view, have straight anticlinal cell walls on both sides. Anomocytic stomata are present on the abaxial side. The mesophyll is homogeneous and formed by 7 layers of spongy parenchyma. The floral stalk and fillet of the stamens are hairy pollen grains are ovals. **Conclusion:** The anatomic markers found in this study can be used to identify the species and to differentiate it from other species used as substitutes and adulterants.

Keywords: Aconitum, Homeopathy, Pharmacopoeia, Quality Control, Ranunculaceae.

References:

¹MORITZ, F. *et al.* Severe acute poisoning with homemade *Aconitum napellus* capsules: toxicokinetic and clinical data. **Clinical Toxicology**, v. 43, n. 7, p. 873-876, 2005.

² KISS, Tivadar *et al.* Identification of diterpene alkaloids from *Aconitum napellus* subsp. firmum and GIRK channel activities of some *Aconitum* alkaloids. **Fitoterapia**, v. 90, p. 85-93, 2013.