

PHARMACOGNOSTIC STUDY OF ALOE LEAVES

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Introduction. *Aloe vera* (L.) Burm. f. (syn. *A. barbadensis* Mill.) is a plant from *Liliaceae* family which grows naturally in Africa, Asia, China and many other parts of the world. The earliest documented use of *Aloe vera* comes from the ancient Egyptians, but it was also grown and used by King Solomon, who was said to have valued it highly. The plant, because of its medicinal value, it has been used for thousands of years as a herbal plant. Popular topical uses of the inner aloe leaf include treatment of abrasions, burns, cancers (as a poultice), inflammation, psoriasis, skin irritations and fungal infections, UV-radiation damage; as an emollient; and as a common cosmetic ingredient. Indications for internal use include diabetes, coughs and sore throat, kidney pains, digestive problems, stomach ulcers, and jaundice. The juice is also used as a mild laxative and for relief of difficult childbirth. Mixed in rum, the juice of aloe leaf is used as a carminative; with sugar, to relieve asthma and other bronchial afflictions, and with milk for dysentery in children.

Aim of the research. The aim of our research was to carry out pharmacognostic study of Aloe leaves collected in summer 2015 in Zambia.

Materials and methods. The identification of the leaf was carried out macro- and microscopically. Identification of biologically active compounds was carried out using quality reactions, paper and thin-layer chromatography.

Results and discussion. The leaf of aloe vera can be described as consisting of two major parts: the outer green rind and the colorless inner leaf. The inner leaf, alternatively referred to as “gel,” “pulp,” “mucilage layer,” “aquiferous tissue,” or “mesophyll,” is a clear, transparent, colorless mass. As the microscopic identification showed, the aloe leaf consists of the following tissues: epidermis covered with a waxy thick cuticle, chlorenchyma with needle-shaped oxalate crystals (styloids), a single row of vascular bundles between chlorenchyma and the inner parenchyma, which it encircles, and colorless inner parenchyma occupying the center of the leaf.

The reaction with 96 % ethanol allowed to identify polysaccharides in the plant material studied. Reactions with gelatin, ferric (III) chloride, quinine hydrochloride confirmed the presence of tannins in the aloe leaves. *p*-Coumaric and cinnamic acids, as well as such amino acids as arginine, lysine, leucine, phenylalanine, glutamine, alanine, aspartic and glutamic acids, were identified by paper chromatography, quercetin – by TLC. Thus, further study of the quantitative content of the main groups of biologically active compounds will be carried out in order to determine the quality of the plant material studied.