ALOIN ANALYSIS IN AQUEOUS EXTRACT OF THE CHLOROPHYLLOUS PARENCHYMA OF *Aloe barbadensis* Miller BY CHROMATOGRAPHIC METHODS

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Plants of the *Aloe* genus belong to *Asphodelaceae* family and consist in about 420 species. This genus is native to Southeast Africa and was introduced in the Mediterranean region and tropical regions. Experiments performed since 1950 decade using leaf extracts and chromatographic techniques have shown the presence of arachidonic compounds, such as anthranol, aloe-emodin, aloin (barbaloin), crisophanol and *p*-coumaric acid. Among these molecules, aloin [10-glucopyranosyl-1-8-dihydroxy-3-3(hydroxymethyl)-9(10H) anthracenone] is the major anthraquinone being mostly found in the sap of *Aloe* spp. Its presence in *A. barbadensis'* crude gel is attributed to incorrect manipulation of the leaves during the processing steps, allowing the contamination of that biomass through direct contact with the sap. Since the occurrence and the amount of aloin in leaf chlorophyllous parenchyma of *A. barbadensis* have meaningful importance regarding to the economical value of that biomass, this study aimed to detect the presence of aloin in the aqueous extract of leaf tissue by liquid chromatography and thin layer chromatography (TLC). For that, samples (5) of lyophilized aqueous extract (1g) of the chlorophyllous parenchyma were sequentially fractioned using *ca.* 20mL methanol (MeOH), dichloromethane (DCM) and methanol:hexane (9:1). From the MeOH fraction an aliquot (~ 2mL) was collected and *flash*-chromatographed using silica gel G60 (55mL, Vetec) as stationary phase and MeOH, MeOH:DCM (1:1) and MeOH:ethyl-ether (1:1) as mobile phases, yielding 9 fractions. These fractions were evaluated by means of thin layer chromatography (TLC) using ethyl acetate:methanol:water (100:16.5:13.5) as solvent, developed with potassium hydroxide alcoholic-solution, followed by detection under UV-light (254ηm and 360ηm).

Aloin, the majoritary anthraquinone, was found only in the methanolic fraction (Figure 1), but other 5 to 8 compounds depending on the sample were also detected with lower or higher Rf values in respect to aloin (Rf = 0.41).

These findings suggest that typical chromatographic procedures, i.e., *flash*-chromatography followed by TLC analysis are an interesting approach for detection of aloin in processed (freeze-dried) *A. barbadensis* biomass, being lesser expensive than HPLC analysis, an outstanding trait for quality control in small industries of *Aloe* gel. Quantitative analyses of the aloin in the methanolic fraction of the lyophilized aqueous extract have been performed by HPLC and the results will be published elsewhere.

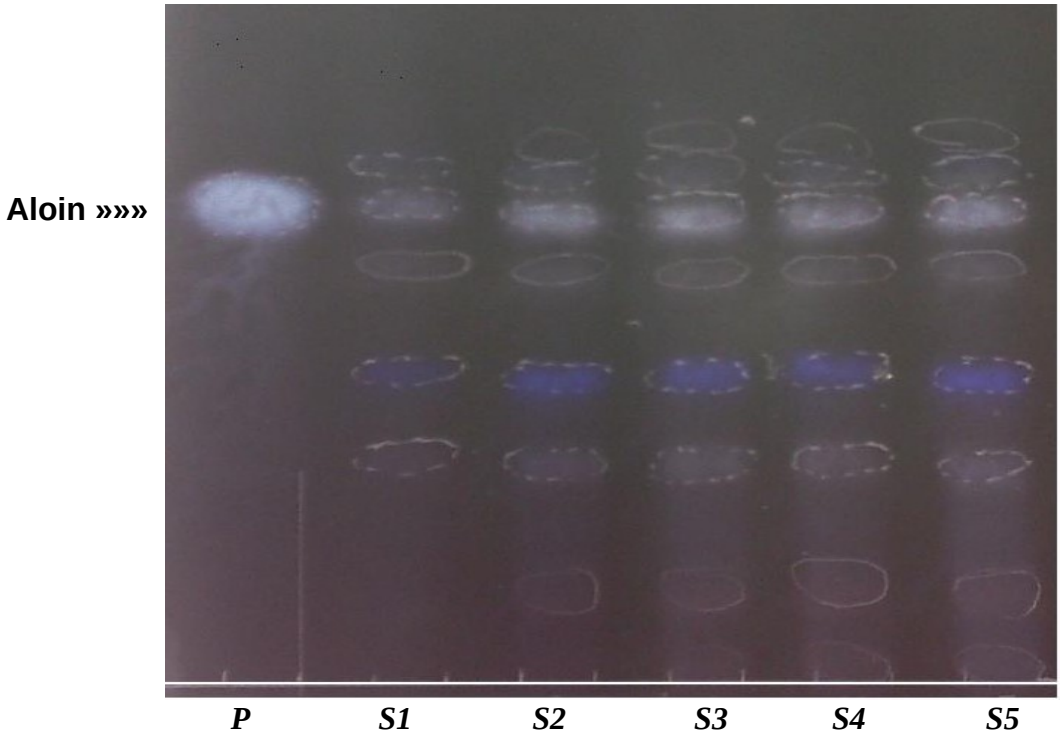

Figure 1. Thin layer chromatogram of the *flash*-chromatographed methanolic fractions of the freeze-dried aqueous extract of *Aloe barbadensis'* chlorophyllous parenchyma. **P**: Aloin, standard compoud; **S1-S5**: samples of lyophilized aqueous extract of *Aloe barbadensis*.