CHROMATOGRAPHIC MONITORING OF THE COMPLETENESS OF THE ISOLATION OF ALKALOIDS FROM SENECIO PLATYPHYLLOIDES

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The alkaloid platyphylline is widely used in medical practice. Several methods for isolating it from plant material have been described [1–4]. The completeness of the extraction of the alkaloids is generally monitored by reagents precipitating the alkaloid bases.

In this paper we propose to monitor the degree of isolation of the alkaloids from the roots and rhizomes of Senecio platyphylloids (Somm. et Lev.) [5] collected in 1967 in the fruit-bearing period in the Makharadze region (Georgian SSR) by thin-layer chromatography.

KSK silica gel mixed with gypsum and water (6.0 : 0.35 : 18) was deposited on plates (10 × 20 cm) and these were dried in the air and then at 110° C for 1 hr. Chromatography was carried out in the ether–acetone–diethylamine (80 : 20 : 5) system with a length of run of 10 cm, and the spots were revealed with Dragendorff's reagent as modified by Munier.

The raw material previously wetted with ammonia was extracted with chloroform and dichloroethane and with 2% H_2SO_4 by steeping for 12 hr (ratio of raw material to solvent 5 : 1). Each extract (10 ml) was evaporated to dryness, the residue was dissolved in a few drops of 1% HCl, and the resulting solution was chromatographed. Platyphylline, seneciphylline, and sarracine were used as reference samples.

In S. platyphylloides we identified platyphylline and seneciphylline with R_f 0.31 and 0.51, respectively, regardless of the nature of the extracting liquid.

To ensure the complete isolation of the platyphylline and seneciphylline from the raw material, 11 and 7 steepings with chloroform, 9 and 7 with dichloroethane, and 5 and 4 with sulfuric acid solution are required, respectively.

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