

By two-dimensional paper chromatography we have established that the leaves of *Atraphaxis frutescens* L. contain polyphenolic compounds consisting of catechins, phenolic acids, flavonol aglycones, and glycosides. A methanolic extract evaporated to small volume was extracted successively with petroleum ether, chloroform, ether, and ethyl acetate. By chromatography on silica gel and polyamide, four substances were isolated from the ethereal extract and identified.

Quercetin, mp 310–312°C, and kaempferol, mp 278–280°C, were identified from their elementary analyses and IR and UV spectroscopy, and by comparison with authentic samples of these substances.

Substance (III) with mp 176°C,  $[\alpha]_D^{25} +16.6^\circ$  [acetone–water (1:1)] was identified as (+)-catechin [1] and substance (IV) as 4,5-dihydroxy-3-methoxybenzoic acid, mp 197°C (from hot water) by qualitative reactions [2], elementary analysis, IR spectroscopy (well-defined bands of an OCH<sub>3</sub> group at 2960, 2850, and 1450 cm<sup>-1</sup>), demethylation (% OCH<sub>3</sub>, calculated: 16.84; found: 16.40), and by a determination of the equivalent.

## LITERATURE CITED

1. F. E. King and I. W. Clark-Lewis, *J. Chem. Soc.*, 2948 (1955).
2. *Beilsteins Handbuch der Organischen Chemie*, Vol. X (1927), pp. 472, 480.

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