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## INDOLE ALKALOIDS AND QUASSIN FROM *QUASSIA AFRICANA*

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In our continuing phytochemical investigation of biologically active constituents from Simaroubaceae spp., we report here the occurrence in root barks of *Quassia africana* Baill. (syn. *Simaba africana* Baill.) of three alkaloids (canthin-6-one, 4,5-dimethoxycanthin-6-one,  $\beta$ -carboline-1-propionic acid) and quassin, an additional quassinoid different from those previously isolated from this plant (1). Their structures were established by spectroscopy and direct comparison with authentic samples.

### EXPERIMENTAL

**PLANT MATERIAL.**—Root samples of *Q. africana* were collected in northeastern Zaïre (October 1983) and in the south Congo (February 1984). A voucher specimen has been deposited at the Botanical Institute of the Free University of Brussels.

**ISOLATION OF CANTHINONE ALKALOIDS.**—The crude chloroformic extract obtained after alkalization of the dried powder was extracted with 0.1 N HCl. The extraction of the acid aqueous phase with  $\text{CHCl}_3$  led to isolation of canthin-6-one (70 mg, 0.07%). 4,5-Dimethoxycanthin-6-one (40 mg, 0.04%) was further isolated by extraction with  $\text{CHCl}_3$  after adjustment to pH 10 of the aqueous phase. Purification of both alkaloids was achieved by preparative tlc on Si gel with toluene- $\text{Me}_2\text{CO}$ -EtOH- $\text{NH}_4\text{OH}$  (50:30:4:1) (2).

**Isolation of  $\beta$ -carboline-1-propionic acid (10 mg, 0.02%).**—The dried powder was extracted with MeOH acidified with HOAc. The methanolic extract was concentrated after dilution with  $\text{H}_2\text{O}$ ; the pH value was adjusted to 5 and the alkaloid was precipitated by addition of picric acid. The picrate was dissolved in  $\text{Me}_2\text{CO}$ - $\text{H}_2\text{O}$  (1:1), chromatographed through an Amberlite IRA 400( $\text{Cl}^-$ ), and purified by preparative tlc on Si gel with toluene-EtOH-EtOAc- $\text{NH}_4\text{OH}$  (4:4:2:1) (3).

**Extraction of quassin (25 mg, 0.05%).**—The dried powder was extracted with MeOH and the residue was fractionated on a short Si gel column with  $\text{CHCl}_3$  containing increasing amounts of MeOH. The fraction which contained quassin was further purified by preparative tlc on Si gel using  $\text{CHCl}_3$ -MeOH (7:3) (4).

Full details of the isolation and identification of the reported compounds are available upon request.

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