

Isolation and Identification of Ursolic Acid from *Coffea arabica* L. (Coffee) Leaves

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SUMMARY

The occurrence of ursolic acid in the mature leaves of *Coffea arabica*, is shown. It has been shown by TLC that coffee leaf ether extract contains triterpenoids which is predominately ursolic acid. The concentrated ether solution was extracted with dilute NaOH, acidified and extracted with ether. After evaporation of the organic solvent, the residue was chromatographed on silica gel using methanol-benzene (5:95). Fractions giving positive reaction with Liebermann-Burchard reagent were collected and evaporated. The residue was crystallized from benzene-ethanol (yielding: 0.05% DM), and its derivatives (acetate, methyl ester and methyl ester acetate) were prepared. Analysis by IR, FAB-MS, MS/MS, ¹³C-NMR, and TLC show it to be ursolic acid. The occurrence of ursolic acid has not been found in any other part of the coffee plant but in leaves.

RESUMEN

Se demuestra la presencia de ácido ursólico en las hojas maduras de *Coffea arabica*. Usando TLC, se ha demostrado que el extracto de éter de las hojas del café contiene triterpenoides, los cuales se forman del predominante ácido ursólico. La solución concentrada de éter fue extraída con NaOH diluido, acidificada y extraída con éter. Después de la evaporación del solvente orgánico, el residuo se sometió a cromatografía con sílica gel usando metanol:benceno (5:95). Fueron colectadas y evaporadas las fracciones que dieron reacción positiva con el reactivo de Liebermann-Buchard. El residuo de benceno-etanol, fue cristalizado (produciendo .05% de peso seco), y sus derivados (acetato, acetato de metilo y acetato ester de metiol) fueron preparados. Análisis por IR, FAB-MS, MS/MS. ¹³C-NMR y TLC mostraron la presencia de ácido ursólico. El ácido ursólico está presente solo en las hojas, no se ha encontrado en otra parte de la planta del café.