

SHORT COMMUNICATION

CONSTITUENTS OF *QUERCUS ALBA*

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Plant. *Quercus alba* L. (Fagaceae).

Source. Albany Hunting Ground, Green County, Wisconsin, U.S.A.

Previous work. Alcohol extracts of heartwood.¹

Present work. Healthy heartwood was extracted with CHCl₃, then acetone–water (95:5). Chromatography (silica gel; solvent, CHCl₃–EtoAc, 50:1) of the CHCl₃ extracts gave three major fractions.

1. Triglyceride mixture: After saponification and methylation, it gave ~75 per cent methyl *c*-9,*c*-12-octadecadienoate, ~10 per cent methyl *cis*-9-octadecanoate, and ~10 per cent methyl hexadecanoate (NMR,² GLC on DEGS, and SE/EGiP).

2. Ferulic acid ester mixture: Tetracosyl ferulate was the major product (m.p. 61–64°, NMR, i.r.,³ and mass spectra).

3. Steroid mixture: Consisted of ~85 per cent β -sitosterol, ~7 per cent stigmasterol, ~3 per cent campesterol, and a trace of dihydro- β -sitosterol (GLC on SE-30, NMR and mass spectra).^{4–6}

In the acetone–water extracts, the presence of gallic acid, ellagic acid, gallotannins and ellagitannins, and coniferyl aldehyde were identified (2D paper chromatography).

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¹ R. A. BLACK, A. A. ROSEN and S. L. ADAMS, *J. Am. Chem. Soc.* **75**, 5344 (1953).

² C. Y. HOPKINS and H. J. BERNSTEIN, *Can. J. Chem.* **37**, 775 (1959).

³ J. W. ROWE, C. L. BOWER and E. R. WAGNER, *Phytochem.* **8**, 235 (1969).

⁴ B. A. KNIGHTS, *J. Gas Chromatog.* **5**, 273 (1967).

⁵ S. S. FRIEDLAND, G. H. LANE, R. T. LONGMAN, K. E. TRAIN and M. J. O'NEAL, JR., *Anal. Chem.* **31**, 169 (1959).

⁶ S. BERGSTRÖM, R. RYHAGE and E. STENHAGEN, *Svensk Kem. Tidskr.* **73**, 566 (1961).