

LAURACEAE

PHYTOSTEROLS AND *n*-PARAFFINS FROM *LINDERA UMBELLATA*

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Abstract—*n*-Paraffins (ranging from C₁₆ to C₃₃) and phytosterols (β -sitosterol, stigmasterol, campesterol) were detected from the leaves and trunks respectively.

Plant. *Lindera umbellata* Thunb.

Occurrence. Hiroshima Prefecture, Japan.

Previous works. Terpenes,¹⁻² a chalcone and a palmitone.²

Leaves and trunks. Collected on the mountainous district on July 1970. Crushed to pieces and extracted with *n*-hexane (leaves) and Et₂O (trunks) respectively.

n-Paraffins. Isolation (from the leaves, 100 g, extracted *n*-hexane and purified by the combination of column chromatography and molecular sieve 5A treatment).³ Identification (by GLC using two columns, SE-30 and Apiezon L grease 5% at 150–300°). *n*-Paraffins (50 mg, 0.005%): C₁₆ (0.1%), C₁₇ (0.2), C₁₈ (0.3), C₁₉ (0.3), C₂₀ (0.6), C₂₁ (0.3), C₂₂ (0.6), C₂₃ (1.3), C₂₄ (1.2), C₂₅ (4.5), C₂₆ (1.5), C₂₇ (18.0), C₂₈ (1.5), C₂₉ (53.3), C₃₀ (1.3), C₃₁ (15.0). The odd paraffins are in large amounts (92.8% of the *n*-paraffins, even paraffins 7.2%).

Phytosterols. Phytosterols (100 mg, 0.003%) were isolated from the trunks (3 Kg). Purification (column chromatography with Et₂O and recrystallization with MeOH). β -Sitosterol (86% of the total sterols, identified m.p., mixed m.p., IR).⁴ In addition to this sterol, a small amount of stigmasterol (13%) and campesterol (1%) were detected by GLC (SE-30 at 280°).

¹ J. HAGIWA, M. HARADA, M. NAKJIMA, and K. SAKAI *Yakugaku Zasshi* **82**, 1442 (1962).

² N. HAYASHI, K. TAKESHITA, N. NISHIO, and S. HAYASHI *Flavour Ind.* **1**, 405 (1970).

³ N. Y. CHEN and S. J. LUCKI, *Analyt. Chem.* **42**, 508 (1970).

⁴ W. T. BEBER, J. PARSON and G. D. BAKER, *Analyt. Chem.* **29**, 1147 (1957).