

Phytochemical Study of the Fruit Pulp of *Grewia asiatica* Linn

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Grewia asiatica Linn (N. O. Tiliaceae) uses — medicinal¹. Previous work — on stem cuttings², seed oil³, stem bark⁴, and flowers^{5,6,7}. Present work — fruit pulp was extracted with hot petroleum ether (40–60°), then successively with cold methanolic hydrochloric (2%), ethyl acetate and hot ethanol.

The petroleum ether extract gave a viscous oil which was rejected. The 2% cold methanolic hydrochloric acid extract was concentrated which on column chromatography yielded compound (A). The ethyl acetate extract on column chromatography on silica gel afforded compounds (B), (C) and (D).

From a study of its colour reactions, UV spectral data, degradation m. p., m. m. p., compound (A), C₂₇H₃₁O₁₅, was identified as pelargonidin 3,5-diglucoside⁸. Compound (B), C₁₅H₁₀O₈, was found to be identical with quercetin⁹. Compound (C), C₂₂H₂₂O₁₁, m.p. 294–5° and compound (D) C₂₁H₂₂O₁₀, m.p. 225–6° were identified as quercetin 3-O-β-D-glucoside¹⁰ and naringenin-7-O-β-D-glucoside¹¹ respectively. Besides these from the ethanolic extract of the pulp four amino acids, proline, lysine, glutaric acid and phenyl alanine and three free sugars, glucose, xylose, and arabinose were isolated and characterised by paper co-chromatography with authentic samples.

Tannins, catechin and leucoanthocyanins were also found in the ethanolic extract.

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References

1. K. R. KIRTIKAR and D. B. BASU, In "Indian Medicinal Plants, 1935, 1, 338.
2. O. S. JAUHARI, *Science and Culture*, 1960, 6, 144.
3. I. AHMAD, *Pakistan J. Sci. and Ind. Res.*, 1964, 7, 145.
4. S. CHATTOPADHYAY and S. C. PARAKHI, *J. Indian Chem. Soc.*, 1975, 52, 553.
5. V. LAKSHMI and J. S. CHAUHAN, *J. Indian Chem. Soc.*, 1976, 53, 632.
6. V. LAKSHMI and J. S. CHAUHAN, *Phytochemistry*, 1976, 15, 1397.
7. V. LAKSHMI and J. S. CHAUHAN, *Lloydia*, 1976, 39(s), 372.
8. K. HAYASHI, Y. ABE, T. NOGUCHI and G. SUZUSHINO, *Pharm. Bull. (Japan)*, 1953, 1, 130.
9. T. A. GEISMANN, In "The Chemistry of Flavonoid Compounds", Pergamon Press, London, 1962, p. 423.
10. J. B. HARBORNE, In "Comparative Biochemistry of Flavonoids", Academic Press, London, 1967, p. 87.
11. J. B. HARBORNE, In "Comparative Biochemistry of Flavonoids", Academic Press, London, 1967, p. 54.