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Prenylated 2-arylbenzofuran derivatives with potent antioxidant properties from *Chlorophora regia* (Moraceae)

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Chlorophora regia is a large dioecious tree of about 35–45 meters belonging to the family Moraceae. The tree is widely distributed across tropical West Africa and indigenous to the forest zone of Senegal, Gambia and Ghana. Traditionally, extracts of the stem bark are used for the treatment of burns and wounds, snake bite, wasp bite and syphilis. Extract of the root bark has been reported to be active against *Staphylococcus aureus*. Although some species in the genus have been investigated, there is no report in literature, to the best of our knowledge, of the chemical composition of this medicinal plant. In this report, an investigation to establish a comprehensive chemical composition and to contribute to the chemotaxonomy of the Ghanaian medicinal plant *Chlorophora regia*, resulted in the isolation and characterization of three new 2-arylbenzofuran derivatives, regiafuran A–C (1–3) and one new prenylated flavonol, 6–prenylated–3,5,7,4′–tetrahydroxy–2′–methoxyflavonol (4), together with fifteen known bioactive compounds (5–19). A tentative biosynthetic pathway of compound 4 was proposed based on the biosynthesis of flavonols. The free radical scavenging properties of the compounds were evaluated using DPPH. Compounds 1, 2, 5, 9 and 15 exhibited potent free radical scavenging properties with IC₅₀ values of 1.9 µg/ml, 2.4 µg/ml, 2.2 µg/ml, 2.1 µg/ml and 1.8 µg/ml, respectively, compared to the standard trolox (IC₅₀ 1.1 µg/ml).

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