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Phytochemical and Biological Study of Chrozophora oblongifolia

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Abstract : Chemical investigation of Chrozophora oblongifolia resulted in the isolation of five major compounds that were identified as apeginin-7-O-glucoside (1), quercetin-3-O-glucuronic acid (2), quercetin-3-O-glacturonic acid (3), rutin (4), and 1,3,6-trigalloyl glucose (5). The identity of isolated compounds was assessed by different spectroscopic methods, including one- and two-dimensional NMR. The isolated compounds were tested for their antioxidant activity using different assays viz., DPPH, FRAP, ABTS, ORAC, and metal chelation effects. In addition, the inhibition of target enzymes involved in the metabolic syndrome, such as alpha-glucosidase and pancreatic lipase, were carried out. Moreover, the effect of the compounds on the advanced glycation end-products (AGEs) as one of the major complications of oxidative stress and hyperglycemia in metabolic syndromes were carried out using BSA-fructose (bovine serum albumin), BSA-methylglyoxal, and arginine methylglyoxal models. The pure isolates showed a protective effect in metabolic syndromes as well as promising antioxidant activity. The results showed potent activity of compound 5 in all measured parameters meanwhile, none of the tested compounds showed activity against pancreatic lipase.

Keywords : Chrozophora oblongifolia, antioxidant, pancreatic lipase, metabolic syndromes
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