Antiradical and Xanthine Oxidase Inhibitory Activity Evaluations of Averrhoa bilimbi L. Leaves and Tentative Identification of Bioactive Constituents through LC-QTOF-MS/MS and Molecular Docking Approach

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Abstract

The objective of the present study was to investigate the antiradical and xanthine oxidase inhibitory effects of Averrhoa bilimbi leaves. Hence, crude methanolic leaves extract and its resultant fractions, namely hexane, chloroform, and n-butanol were evaluated for 2,2-diphenyl-1-picrylhydrazyl (DPPH) radical scavenging effect and xanthine oxidase inhibitory activity. The active constituents were tentatively identified through LC-QTOF-MS/MS and molecular docking approaches. The n-butanol fraction of A. bilimbi crude methanolic leaves extract displayed significant DPPH radical scavenging effect with IC50 (4.14 +/- 0.21 g/mL) ($p < 0.05$), as well as xanthine oxidase inhibitory activity with IC50 (64.84 +/- 3.93 g/mL) ($p < 0.05$). Afzelechin 3-O-alpha-l-rhamnopyranoside and cucumerin A were tentatively identified as possible metabolites that contribute to the antioxidant activity of the n-butanol fraction.

Keywords

Author Keywords: Averrhoa bilimbi; Oxalidaceae; DPPH; xanthine oxidase; LC-QTOF-MS; MS; molecular docking; tentative bioactive constituents

KeyWords Plus: STREPTOZOTOCIN-DIABETIC RATS; RADICAL SCAVENGING ACTIVITY; SEMI-PURIFIED FRACTIONS; ANTIDIABETIC ACTIVITY; MECHANISM

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