Phyllanthus embilica Leaves Extract: A Potential Amylase Enzyme Inhibitor with Antioxidant and Antimicrobial Activity

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Abstract

Plants are an important source of chemical constituents, which have potential as functional food and therapeutic agents. The ethanolic extract of *Phyllanthus emblica* leaves exhibited inhibition (61.12%) against α-amylase at pH 7 and temperature 40˚C. The extract acts as a non-competitive inhibitor and reduces turnover number (K_{cat}) and catalytic efficiency (K_{cat} / K_m). It contains phenol and vitamin C content, 117 and 5.12 mg g^{-1} respectively. Antioxidant activity of leave extract (600 µg ml^{-1}) is equivalent to the 800 µg ml^{-1} strength of ascorbic acid. The extract has antibacterial effectiveness against bacteria strains *E. coli* and *S. aureus* test organisms.

Keywords

Phyllanthus emblica, Extract, enzyme inhibition, antibacterial effectiveness.