

**EXTRACTION OF BIOACTIVE COMPOUNDS  
FROM *Sonneratia caseolaris* FRUIT AND IDENTIFY  
ITS POTENTIAL PROPERTIES**

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by

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## ABSTRACT

Mangrove plants are broadly used in Ayurveda medicines for its biochemical properties. Secondary metabolites which produce by these plants have shown antioxidant, antibacterial, metal chelation and antidiabetic activity. But the activities of the *Sonneratia caseolaris* (Kerala) fruit is less studied in Sri Lanka. Objective of this study was to isolate bioactive compounds from *Sonneratia caseolaris* fruit and identify its potential biochemical properties. Medium size (4-6 cm), 60-75% ripen fruits were collected from Bentharu, Sri Lanka. Fruits were blend with water and ethanol and kept at 4 °C overnight. Extractions were dialysis to remove the solvents and all samples were lyophilized. Antimicrobial activity was determined by inhibition of locally isolated *Escherichia coli* (*E. coli*) strains. All treatments were replicated (n=3). Antibacterial assay was done for prepared concentration series. *E. coli* were sub cultured using EC broth. Inhibition of *E. coli* was determined using EMB agar well diffusion method and as the positive and negative controls Augmentin (0.001ppm) and distilled water. Anti-diabetic activity was determined by  $\alpha$ -amylase inhibition assay ( $\alpha$ -amylase-13U). Anti-oxidation activity was determined using DPPH (1,1-diphenyl-2-picrylhydrazyl) assay. Metal chelation activity determined by ferrous chelation and ferrozine method was used. Total phenol content and anthocyanin content were measured. By comparing the results obtained ethanol extraction showed high inhibition than water extraction against *E. coli*. In antidiabetic determination assay ethanol extracted liquid sample show the highest amylase inhibition. Even the inhibition showed a higher value in lower concentrations such as 100 ppm (80%). All sample have strong anti-oxidative activity and fruit contain high phenol and anthocyanin content. As the conclusion, Kerala fruit extracts can be used as potential drug and food purposes, and further studies required to chemically characterize the active compounds.

**Keywords:** *Sonneratia caseolaris*, Antimicrobial activity, Anti-diabetic activity, Antioxidative activity, Total phenol content, Anthocyanin, Ferrous chelation