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Biochemical and antimicrobial effects of aqueous and alcoholic extracts of *Codiaeum variegatum* (L.) Blume cv. *ovalifolium* (Euphorbiaceae)

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ABSTRACT

Objective: Garden croton, *Codiaeum variegatum* (L.) Blume, a beautifully variegated leafy perennial, tropical ornamental herb with glabrous branches and prominent leafy scar has generated a lot of scientific enquiry. However, there is paucity of information on its toxicity. This study investigated the effects of aqueous and alcoholic leaf extracts of *C. variegatum* on blood clotting and coagulation time, as well as the antimicrobial and phytochemical profile of its bioactive constituents.

Results: The leaf methanolic extract tested positive for alkaloid, anthraquinone, cardiac glycosides, saponins, phlobatanins, tannins, cardenolids, steroids, flavonoids, phenols and phyllates. The ethanolic extract of leaf inhibited growth of *Streptococcus pneumoniae* Te2 (30 mm), *S. pyrogeneae* Td2 (14 mm), *Salmonella typhi* Tc2 (7 mm), *S. typhi* Tc19 (13 mm), *S. typhi* Sat7 (10 mm) and *Escherichia coli* Ecl7 (17 mm).

Furthermore, results indicated that the clotting / bleeding time of methanolic extract of *C. variegatum* (3.98 ± 1.62 min) was significantly higher (P< 0.05) than the aqueous extract (1.72 ± 0.38 min) and control (normal saline) (2.35 ± 0.70 min). Although the investigation revealed no blood coagulation by the leaf aqueous extract, the methanolic extract (3.08 ± 2.5 min) and control (4.95±3.40 min) exhibited a coagulation tendency at the time of study.

Conclusion: Both aqueous and alcoholic extracts of *C. variegatum* cv. *ovalifolium* possess bioactive metabolites with anti-clotting, anti-coagulating and antimicrobial properties.

Key words: Antimicrobial, *C. variegatum*, clotting, coagulation, phytochemical.