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COMPARATIVE STUDY OF *IN VITRO* ANTICOAGULANT ACTIVITY OF RAW, BOILED AND HONEY FERMENTED *Allium sativum* (GARLIC) USED IN SRI LANKA

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Sri Lankans consume garlic as raw, cooked and honey-fermented. Anticoagulant properties of garlic vary with different preparations. Here we analysed the *in vitro* anticoagulant activity of aqueous extracts of raw, boiled and honey-fermented garlic to determine the anticoagulant activity. Aqueous extracts of raw, boiled, and honey-fermented garlic preparations at different concentrations (10, 50, 250 and 500 mg ml^{-1}) were prepared. *In vitro* anticoagulant activity was analysed by replicating prothrombin time (PT) of pooled plasma diluted with different garlic extracts four times. Independent sample *t*-test and Mann Whitney U test compared the PT values among each preparation. Mean PT values with aqueous extract of honey fermented garlic (25.8 ± 0.5, 27.8 ± 0.5, 30 ± 0.0 and 30 ± 0.0 s) were significantly higher compared to control (24 ± 0.0 s) at all concentrations ($p < 0.05$). The mean PT values with aqueous extract of raw garlic (25 ± 0.0 and 28.3 ± 0.5 s) and boiled garlic (25.3 ± 0.5 and 26 ± 0.0 s) were significantly higher compared to control only at high concentrations (250 & 500 mg mL^{-1}; $p < 0.05$). The PT values increased with an increasing concentration of garlic extract. Honey fermented garlic had significantly higher PT values than the other two preparations ($p < 0.05$). Raw garlic had significantly high PT values than boiled garlic at high concentrations ($p < 0.05$). The boiling of garlic prevented the formation of organosulfur compounds, which are major compounds responsible for its anticoagulant activity. Honey has an effect on platelet aggregation. All three preparations of garlic have inhibitory effects on blood coagulation. Honey-fermented garlic has higher anticoagulant activity than the other two preparations. The anticoagulant activity increased with an increasing concentration of garlic extract.

Keywords: Boiled garlic, Honey fermented garlic, *In vitro* anticoagulant activity, Raw garlic