**Abstract**

Objective: To determine the antimalarial activity of the ethanol leaf extract of Carica papaya (C. papaya), blood stages of CQ-sensitive and CQ resistant strains against Plasmodium falciparum (P. falciparum) as target species. Methods: C. papaya leaf was collected in and around Kalveerampalyam village, Coimbatore, Tamil Nadu, India. C. papaya leaf was washed with tap water and shade dried at room temperature. An electrical blender powdered the dried plant materials (leaves). The powder 500g of the leaf was extracted with 1.5 L of organic solvents of ethanol for 8 h using a Soxhlet apparatus. The crude plant extracts were evaporated to dryness in rotary vacuum evaporator. One gram of the plant residue was dissolved in 100 mL of acetone (stock solution) and considered as 1% stock solution. From this stock solution, different concentrations were prepared ranging from 2%, 4%, 6%, 8% and 10%, respectively. Results: The highest larval mortality in the ethanol leaf extract of C. papaya against the 1st to 4th instars larvae and pupae values of LC50= 3.65%, 4.28%, 5.41%, 6.70%, and 7.50%, respectively. The LC90 values of 9.61%, 11.75%, 13.53%, 16.36%, and 16.92%, respectively. Plant extracts showed moderate to good antiparasitic effects. These four concentrations (25, 50,100 and 150 µg/mL) of ethanol leaf extracts exhibited promising inhibitory activity against the CQ sensitive strain with (IC50) values 40.75%, 36.54%, 25.30%, and 18.0% and in CQ resistant 50.23%, 32.50%, 21.45%, and 23.12% against P. falciparum. Conclusions: In conclusion, the results indicate the effective plant extracts have the potential to be used as an ideal eco-friendly approaches for the control of vector mosquitoes.