In-Vivo Antiparasitic Assessment and Toxicity Evaluation of Curcuma Longa Against the Growth and Survival of Trypanosoma Evansi

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Abstract:

The effectiveness of Curcuma longa roots on the growth and survival of the haemoflagellate protozoa Trypanosoma evansi was compared with Berenil (C18H22N8O3). Groups of male ICR mice (6 – 8 weeks old, 20 – 25g body weight) were intraperitoneally (i.p) administered with the parasite at 5.0 × 103 T. evansi/mouse and orally given pre- and post-infection treatments with10 µg/mL of C. longa-dH2O extract at 0.1 mL/mouse. The morphological changes of parasite cells were assessed using both light and scanning electron microscopes (SEM). The morphological changes of T. evansi cells were evidenced. The cell became crescent-shaped, and the undulating membrane was destroyed where both posterior and anterior ends were tapered before the flagellum disintegrated in which led to death of the cells. A positive correlation ($p \leq 0.05$, $n = 6$) were recorded between the mice survival time and the ability to inhibit the parasites growth in pre-infection treatment group. Besides, the mice in PRE14 group (daily treated with C. longa-dH2O extract from 14 days before infection) was also recorded the longest survival period. The results for biochemical tests were significantly situated in the normal ranged level for all regimens as well as no abnormalities and injuries found on the selected vital organs. This study significantly evidenced that C. longa could be manipulated as a potential alternative drug for the preservation and welfare of human and livestock beings.