Antiparasitic Assessment of Nerolidol Against the Growth and Survival of Haemoflagellate Protozoa, *Trypanosoma evansi* in Mice

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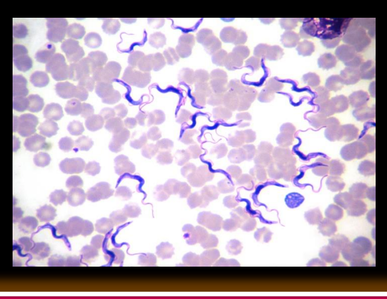
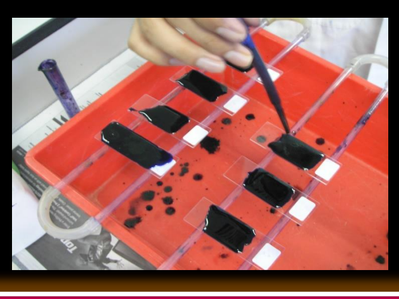
INTRODUCTION

Cell morphological changes are frequently used as indirect indicators of the effect of studied materials on targeted cells. Antiparasitic effects of active compound, nerolidol ($C_{12}H_{26}O$) extracted from cardamom seeds (*Eiettaria cardamomum*) was *in-vivo* compared with commercial drug, Berenil, on the growth and survival of *Trypanosoma evansi* in mice. Stained blood slides were examined under the light microscope (Zeiss Primo Starr attached with Canon LA-DC58F digital camera) and scanning electron microscopes (Phillips XL30 and Leo 1450VP). Mice in the pre-infection treatments not only demonstrated longer pre-patent periods but also exhibited the longest survival times as compared to those of the mice in the groups receiving concurrently or post-infection treatments. The results from this study suggest that nerolidol has a stronger anti-parasitic activity against *T. evansi* by causing the destruction of the cells.

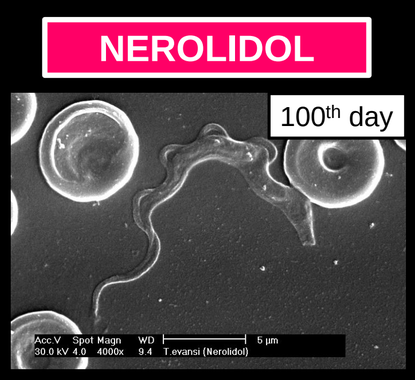
METHODOLOGY

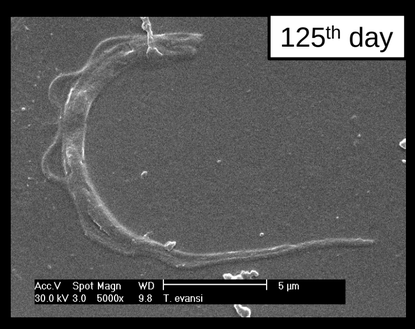
NEROLIDOL

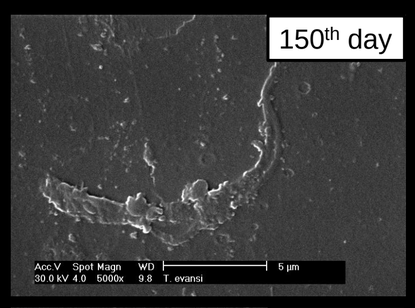


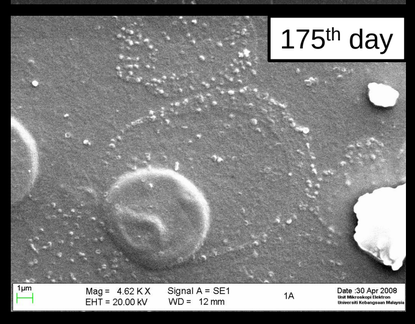


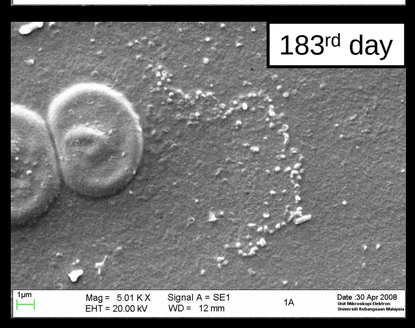
RESULTS



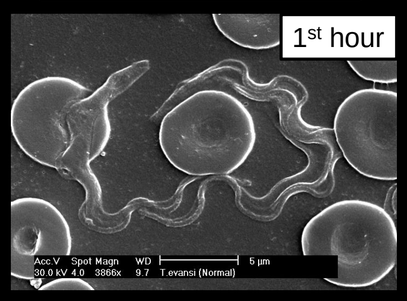


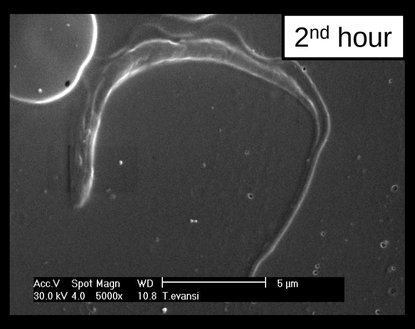


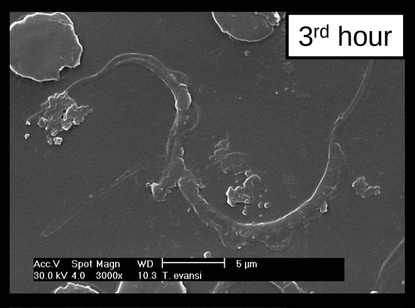


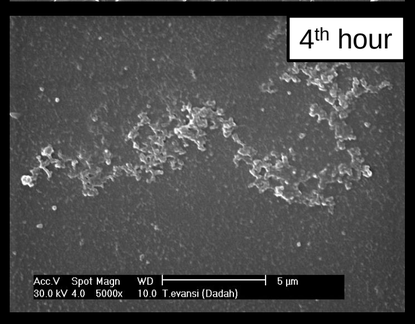


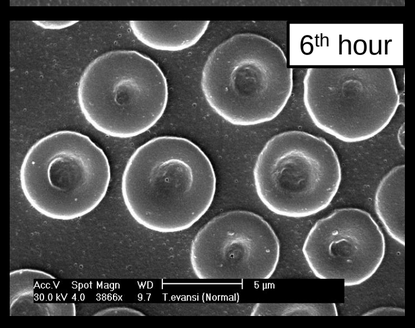
BERENIL

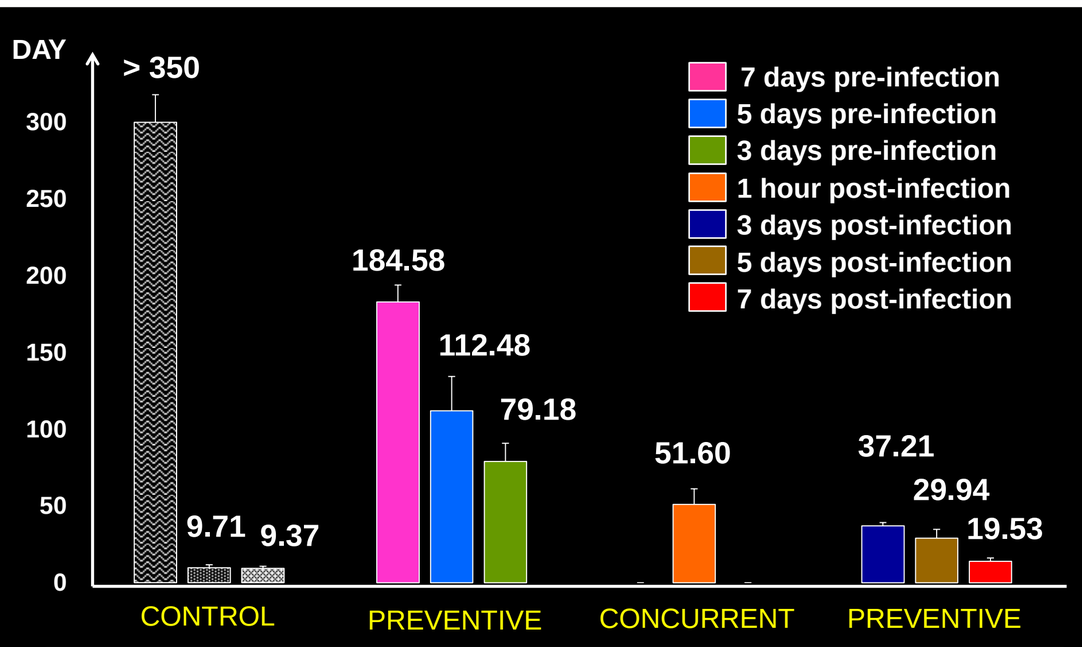




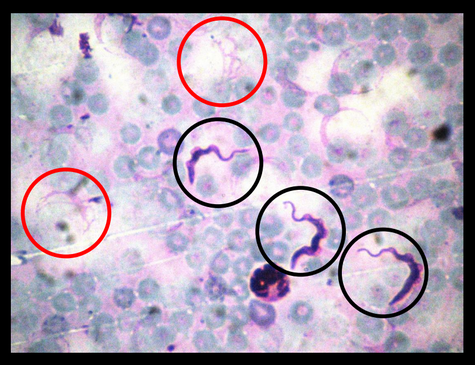


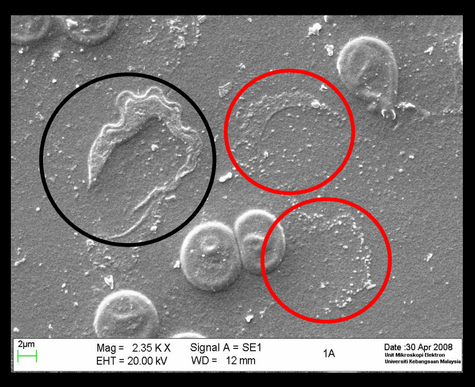






Survival time (Day) of the mice treated with nerolidol according to regime of control, preventive, concurrent and preventive treatment.





DISCUSSIONS

- Stochastic genetic modification of VSG is still the best weapon for trypanosome survival.
- New wave of infection lead the mice susceptible to infection.
- Prophylaxis treatment in preventive regime at 0.1 mL of 0.5 mL/kg bw given on 7 days pre-infection is the best among all regimes in this study.
- Morphological changes of *T. evansi* in nerolidol-treated mice: The undulating membrane was destroyed and the cell became crescent-shaped, before both of the posterior and anterior ends were tapered before the flagellum destroyed and disintegrated in which lead to death of the cells.

CONCLUSION

Nerolidol has a stronger anti-parasitic activity against *T. evansi* by causing the destruction of the cells. Further studies are required to elucidate the mechanism of action of nerolidol on the cell structure.

ACKNOWLEDGEMENT

International Islamic University for financial support, Universiti Kebangsaan Malaysia for technical assistance, instrumentation, parasitology and animal study supervision.