

In vitro* Activity of the Aqueous Extract of the Plant *Kigelia africana* Against *Theileria lestoquardi

Hayat M. Farah^{1*}, Tigani H. El Amin², Abdel Rahim M. El Hussein¹ and Hassan E. Khalid³

¹ **Veterinary Research Institute, Animal Resources Research Corporation,
Khartoum, Sudan**

² **Faculty of Veterinary Medicine, University of Khartoum, Shambat, Sudan**

³ **Medicinal and Aromatic Plants Research Institute, National Centre for Research,
Khartoum, Sudan**

ABSTRACT

The objective of this study was to test the activity of the aqueous extract of the plant *Kigelia africana* against *Theileria lestoquardi*, the causative agent of malignant ovine theileriosis. Aqueous extract of *K. africana* fruits was screened for its *in vitro* activity against *T. lestoquardi* at different concentrations of 250, 500, 5000 and 10000 ppm. Lymphocytes infected with *T. lestoquardi* were isolated from heparinized blood with Ficoll-paque, grown in minimum essential medium and continuously sub cultured until passage 8 which was used for the test. The parasite was identified, using indirect fluorescent antibody test. The results revealed *in vitro* activities of 20%, 58% and 80% at concentrations of 500, 5000 and 10000 ppm, respectively. Lethal dose 50% and 99% (LC₅₀ and LC₉₉) were 2660.28 and 29980.34 ppm, respectively. The extract activity caused significantly (P≤0.05) high death of macroschizonts, decrease in the number of macroschizonts per cell, and increase in the number of extra cellular macroschizonts at concentrations of 5000 and 10000 ppm. The number of dividing cells significantly (P≤0.05) decreased at concentrations of 500, 5000 and 10000 ppm. The number of viable cells, also, significantly (P≤0.05) decreased at concentrations of 5000 and 10000 ppm compared with the control which did not significantly (P>0.05) increase. Besides, the activity of the highest concentration (10000 ppm) revealed some lymphoblast cells with degenerated nuclei. The study showed that *K. africana* has antitheilerial effect on *T. lestoquardi* and could be an effective candidate for the treatment of malignant ovine theileriosis after *in vivo* confirmation. Further studies are recommended for phytochemical analysis and mode of action.

Key words: *Kigelia africana*; *Theileria lestoquardi*; *in vitro* activity: aqueous extract

*Corresponding author: E-mail: hayatmahgoub@yahoo.com