Isolation of an anti-HIV compound from *Elaeodendron croceum* (Thunb.) DC.

by

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Submitted in partial fulfillment of the requirements for the degree

Philosophiae Doctorae

in the Faculty of Natural and Agricultural Sciences

Department of Botany

University of Pretoria

Pretoria

June 2006

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Acknowledgements

The following people and organisations helped and assisted greatly in the completion of the study:

- Prof. J.J.M. Meyer, my promoter.
- Dr. A.A. Hussein for the support and assistance in the chemical work.
- Dr. A. Basson for the toxicity tests.
- National Research Foundation (NRF) for the financial support.
- Mr. E. Palmer and Mr. F. van der Kooy for the NMR analyses.
- Prof. E. Munoz from the University of Cordoba, Spain.
- Me. R. Sanchez from the University of Cordoba, Spain.
Summary

Isolation of an anti-HIV compound from *Elaeodendron croceum*

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June 2006

HIV/AIDS threaten more than 40 million people worldwide and more than 5 million in South Africa alone. There is no cure for the disease yet, and novel drugs need to be discovered to make any progress in combating the disease.

Twelve extracts from indigenous South African plants were analysed, of which one, *Elaeodendron croceum*, showed exceptionally good inhibition of transcription factors and a recombinant HIV strain in the HeLa-TAT-Luc and MT-2 VSV-pseudotyped recombinant virus assays. The pure compound isolated from this extract seemed to be
the most toxic of all the samples, with toxicity of only 25% at a concentration of 100 μg/ml. When the concentration is increased, the toxicity increased slowly from 15% at a concentration of 0.195 μg/ml until it reached 25% toxicity at a concentration of 100 μg/ml. The active concentration of the compound against HIV is much lower at 100 ng/ml with an inhibition of approximately 90% of the recombinant virus. The therapeutic index of 250 makes it a promising possibility to be studied further for the compound to be used as a drug.

The semi-purified extract and the pure compound were tested for its toxicity on VERO cells. The semi-purified extract had no toxicity up to a concentration of 50 μg/ml and the pure compound had toxicity of 20% up to a concentration of 25 μg/ml. The active concentration of 100 ng/ml for the VSV-Pseudotype assay is much lower than the start of toxicity at 25 μg/ml, and leaves a margin of activity before the toxicity level is reached.

Both the extract and pure compound shows promising results in vitro to be developed into a medicine to be used against HIV, but need more research on the effects in vivo. Using an extract is easier, cheaper and faster than isolating a pure compound from the extract. It might also be possible that the extract could be prepared as a tea and its use could be very accessible.