Molluscicidal activities of *Agave angustifolia* (Agavaceae) and *Pittosporum tobira* (Pittosporaceae) against *Biomphalaria alexandrina* and free larvae of *Schistosoma mansoni* under laboratory conditions

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By

Nadia Sayed Mohamed Osman

Research Assistant

Theodor Bilharz Research Institute

Zoology Department

Faculty of Science

Ain Shams University

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By
Nadia Sayed Mohamed Osman

Research Assistant

Theodor Bilharz Research Institute

Under Supervision of:

APPROVAL

1- Prof. Dr. Abdalla Mohamed Ibrahim
Professor and Ex-head of Zoology Dept.,
Faculty of Science,
Ain Shams University

2- Prof. Dr. Mahfouz M. Abdel-Gawad
Professor of Medicinal Chemistry,
Theodor Bilharz Research Institute

3- Prof. Dr. Hanan A. El-Nahas
Head of Medicinal Chemistry Department,
Theodor Bilharz Research Institute

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ABSTRACT

In the search for new molluscicidal plants for controlling the snail vectors of schistosomiasis, laboratory evaluation was made to assess the molluscicidal activity of *Agave angustifolia* and *Pittosporum tobira* plants against *Biomphalaria alexandrina* snails. Results indicated that both plants have promising molluscicidal activity as the LC_{90} of the dry powder of both plants was 120 ppm. The chloroform extract of *A.angustifolia* and the acetone extract of *P. tobira* were the most active extracts among other extracts. Both plants showed marked cercaricidal and miracidicidal potencies against *S .mansoni* larvae. The LC_{90} of the two plants (120 ppm) killed most *B.alexandrina* eggs within 24 h of exposure. The sublethal concentrations of both plants markedly suppressed the survival rate and the mortality increased with increasing the concentrations and the exposure period. The accumulative toxic effect of these concentrations was continuous during the recovery period. Also the reproductive rates of exposed snails were greatly affected even through the recovery period. This depression in reproductive ability of snails was accompanied by histological damage in the hermaphrodite glands of exposed snails. Some biochemical parameters in snails' hemolymph were greatly affected in snails treated with both plants for 4 weeks. Chromatographic isolation of the active constituents of *A.angustifolia* led to isolation of 3 steroidal saponins, among them compound 2 proved to be the most active one.

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