



Journal of Pesticide Science
Pesticide Science Society of Japan

[Available Issues](#) | [Japanese](#) >> [Publisher Site](#)

Author: Keyword: [ADVANCED](#)



[TOP](#) > [Available Issues](#) > [Table of Contents](#) > [Abstract](#)

ONLINE ISSN : 1349-0923

PRINT ISSN : 1348-589X

Journal of Pesticide Science

Vol. 32 (2007) , No. 3 pp.213-221

[\[PDF \(924K\)\]](#) [\[References\]](#)

Preliminary investigation of the disposition of the molluscicidal saponin deltonin from *Balanites aegyptiaca* in a snail species (*Biomphalaria glabrata*) and in mice

Leon Brimer¹⁾, Sanaa Hassan ElSheikh²⁾ and Peter Furu³⁾

1) Department of Veterinary Pathobiology, Faculty of Life Sciences, University of Copenhagen

2) DBL (Danish Bilharziasis Laboratory), WHO Collaborating Centre for Integrated Control of Helminth Infections / University of Khartoum

3) DBL

(Received: June 5, 2006)

(Accepted for publication: February 7, 2007)

Abstract:

A mixture of deltonin and 25-isodeltonin (approx. 1 : 1) was found to be the molluscicidal principle in seeds of *Balanites aegyptiaca* (L.) Del. The disposition in the schistosomiasis vector *Biomphalaria glabrata* and in mice was studied. Snails were exposed to ³H-labelled saponin in water. Administration to mice was oral (O) and intravenous (IV). Snails absorbed the compounds rapidly and showed a high degree of bioaccumulation. The highest concentration was found in the foot followed by the intestines. Snails could excrete the compounds from all organs investigated. Saponin given orally to mice was partly hydrolysed in the intestine, a fraction of genuine and hydrolysed compound being absorbed. Genuine saponin given IV was rapidly distributed to the liver, kidney (medulla), lung and spleen. Compounds did not pass the placenta nor enter the CNS. Excretion was mainly biliary, a minor fraction being excreted in the urine all as genuine compound. About 80% was excreted within 72 hr. While only two (more lipophilic) metabolites were formed in significant amounts by the mice, three such metabolites were seen in extracts of snails. The final toxic agent and the mode of action to target snails remains to be further investigated.

Keywords:

molluscicide, deltonin, disposition, *Balanites aegyptiaca*, *Biomphalaria glabrata*, mouse

To cite this article:

Leon Brimer, Sanaa Hassan ElSheikh and Peter Furu, "Preliminary investigation of the disposition of the molluscicidal saponin deltonin from *Balanites aegyptiaca* in a snail species (*Biomphalaria glabrata*) and in mice". *J. Pestic. Sci.* Vol. **32**, pp.213-221 (2007) .

doi:10.1584/jpestics.G06-19

JOI JST.JSTAGE/jpestics/G06-19

Copyright (c) 2007 Pesticide Science Society of Japan

[View "Advance Publication" version \(June 27, 2007\).](#)



[Japan Science and Technology Information Aggregator, Electronic](#)

