

# Natural Peptides and Plant Extracts protect Skin Cells in culture against venom-induced cytotoxicity

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## INTRODUCTION

Snakebite envenoming is of high priority issue in many tropical and subtropical regions of the world; more than 150000 are killed each year from snakebites while many millions survive from envenoming but face many disabilities and long-term health consequences. Antivenom serums are the only treatment for snakebite envenoming however they present a number of major associated problems, several adverse reactions and their availability is limited. In addition, administration is frequently based on symptomatology resulting in wasting crucial time.

In this study, we investigate the cytotoxicity of *Macrovipera Lebetina Lebetina* (Cypriot endemic viper) venom and examine the antivenom potency of natural compounds (peptides and endemic plant extracts).

## RESULTS

Two different cell lines are used for testing the venom toxicity, human keratinocytes (HaCaT) and human cancer cell line (A549). Venom exhibits great cytotoxicity (24 h) against both cell lines: in HaCaT cells levels reach up to approximately 60% (10 mg/ml) while in A549 cells venom kills almost the 95% cells (5 mg/ml), respectively.

Peptides and plant extracts are tested for their antivenom potency by treating cells at 3 and 6 hours after adding venom in various concentrations. Before testing for their antivenom potency the compounds have been examined for their cytotoxicity with MMT assay in four different concentrations.

Reversed effect is significantly present underlining the cytoprotective effect of natural peptides and plant extracts against the venom of *Macrovipera Lebetina Lebetina*.

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