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PURIFICATION AND CHARACTERIZATION OF
PHOSPHOLIPASE A₂ OF SRI LANKAN RUSSELL'S VIPER
(*Vipere russelli russelli*)

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THESIS PRESENTED BY

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To the Board of study in Chemical Sciences of the

POSTGRADUATE INSTITUTE OF SCIENCE

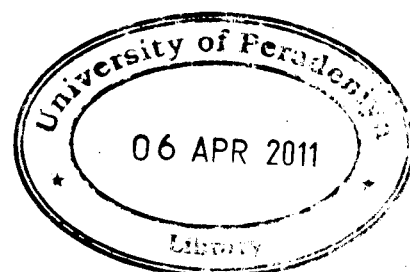
In partial fulfillment of the requirement
for the award of the degree of

MASTER OF SCIENCE IN ANALYTICAL CHEMISTRY

of the

UNIVERSITY OF PERADENIYA
SRI LANKA
2010

645081



**PURIFICATION AND CHARACTERIZATION OF
PHOSPHOLIPASE A₂ OF SRI LANKAN RUSSELL'S VIPER
(*Vipera russelli russelli*).**

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Snakebite is an important health problem in Sri Lanka, particularly in rural and farming areas. Russell's viper is responsible for 60% of snake bites and characterizes the highest incidence of fatal bites. The present study was designed to identify toxic proteins of venom of Russell viper with a long term plan of development of antivenom for Sri Lankan Russell viper (*Vipera russelli russelli*). Russell's viper venom (RVV) has been characterized as follows. Total protein concentration of RVV is 240.56 ± 4.21 mg/ml. Molecular mass were determined using 15% SDS PAGE. Nine RVV proteins were identified and their molecular weights were in the range 98 kDa – 10 kDa. Major toxic protein, Phospholipase A₂ was purified by gel filtration on Shephacryl S 200 followed by DEAE 52 Ion exchange column chromatography. Molecular weight of PLA₂ was calculated using 15% SDS PAGE. (15000Da – 16000Da).

The Lethality (LD₅₀) of crude venom sample is 0.7 mg/kg (subcutaneous) body weight of mice and 1.5 mg/kg (subcutaneous) body weight of rats. The LD₅₀ of PLA₂ is 3.4 mg/kg (subcutaneous) body weight of mice.

In conclusion, LD₅₀ value of rats is two times greater than mice. This toxin contributed 20.5% of the total PLA₂ activity of the crude venom in mice