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SOMPONG SAPSUTTHIPAS : PRODUCTION OF POLYVALENT THERAPEUTIC ANTIVENOM AGAINST *VIPERA RUSSELLI SIAMENSIS*, *CALLOSEPLASMA RHODOSTOMA*, AND *TRIAKRESURUS ALBOLABRIS*. THESIS ADVISORS : KAVI RATANABANANGKOON Ph.D., CHUENCHIT BOONCHIRD Ph.D., PRASIT PALITTAPONGRANPIM M.D., 135 p. ISBN 974-622-442-3

In Thailand several species of snakes are capable of producing the same clinical features of envenoming. Thus, in the absence of a culprit snake, it is very difficult to identify the snake species based on a snake bite victim's signs and symptoms. The problem is very serious, since only monovalent specific antivenoms are available. If polyvalent antivenom could be produced, species diagnosis would become unnecessary and patients could be successfully treated when bitten by unknown snakes.

Two groups of horses were immunized. One group was immunized with a mixture of *V.russelli*, *C.rhodostoma* and *T.albolabris* venoms while the other group was immunized with high molecular weight fractions (> 30 kDa) of the venoms. The immunogens were emulsified in complete Freund's adjuvant and injected by the low volume, multisite immunization procedure established in this laboratory. The second and third immunizations were made with the respective immunogens in Freund's incomplete adjuvant and in aluminium phosphate. Blood was drawn at 2 week intervals to study the kinetics of antibody response using ELISA's. Sera obtained at peak ELISA antibody titers were pooled and further estimations of the median effective dose (ED_{50}) were made. ED_{50} 's of antivenom from Group 1 horses against *T.albolabris*, *C.rhodostoma* and *V.russelli* were 0.07, 0.28 and 1.19 ml serum/mg venom, respectively. The corresponding ED_{50} 's from Group 2 horses were 0.07, 0.32 and 2.60 ml serum/mg venom, respectively. The potencies of sera from both groups of horses were much higher than the potency limits set by the Queen Saovabha Memorial Institute for monovalent antivenoms. This potent, truly polyvalent antivenom should be useful in saving lives of victims where species diagnosis of the culprit vipers can not be made.