

Sinsamut Saengow 2010: Proteomic Analysis of Midgut Proteins Associated with Immunity of Thai Cattle Ticks, *Rhipicephalus (Boophilus) microplus*.
Master of Science (Veterinary Parasitology), Major Field: Veterinary Parasitology, Department of Parasitology. Thesis Advisor: Associate Professor Sathaporn Jittapalapong, Ph.D. 235 pages.

The cattle tick, *Rhipicephalus (Boophilus) microplus*, is an ectoparasite and vector of important blood parasites in cattle such as *Babesia spp* and *Anaplasma spp*. The economic losses of tick infestations in livestock development were effected by the reduction of cattle body weight, and production, as well as chemical, labour, equipment and production losses associated with acaricidal control. The alternative tick control was vaccination against ticks by using candidate proteins such as Bm86 and Bm95 expressed in tick's midgut. The objective of this study was to demonstrate the proteomic profile of tick's gut proteins associated with host's immunity of Thai cattle ticks (*R. microplus*). The result of sodium dodecyl sulfate - polyacrylamide gel electrophoresis and Western blot analysis demonstrated the related protein bands. Nine tick's gut proteins were found by Coomassie staining correlated with immunoblotting. Six and five bands were also found in Bm95 and Bm86, respectively. The result of Liquid Chromatography – Mass Spectrometry analysis showed the most frequently found proteins in each band which was identified as reactive immunogen proteins. These proteins were represented by the highest 50 protein types which analysed from Mascot MS/MS software. The proteomic analysis of tick gut's proteins revealed the perstective proteins which were indential to Bm95 and Bm86 such as angiotensin – converting enzyme, SCO – spondin, and serpin. Additionally, these proteins were the member of proteolytic enzyme for example cathepsin L – like cysteine proteinase, OTU – like cysteine protease and amiopeptidase N protein. These proteins might be associated to host – parasite interaction and expected to be the candidate vaccine in the future.

Student's signature

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