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## Comparative peptidome analysis of the mucus from seven gastropod species

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Gastropods (snails and slugs) are one of the most diverse animal groups. There are several research reports on the gastropod mucus composition containing several glycoproteins and peptides varied per species and habitats. However, some bioactive peptides from the gastropod mucus have been identified only in a few species. Therefore, this study aimed to identify the mucus peptidomes from seven gastropod species representing different taxonomic groups and habitats i.e. *Achatina fulica*, *Pomacea canaliculata*, *Cryptozonia siamensis*, *Semperula siamensis*, *Hemiplecta distincta*, and *Helix pomatia* using biochemical and bioinformatics approaches. The mucus was collected in triplicates, measured the protein contents and separated by 1D-SDS-PAGE before tryptic digestion and peptide sequencing by nano LC-MS/MS. The comparative analysis and clustering of mucus peptidomes were performed using our developed R scripts. Silver-stained gels revealed different band patterns of the mucus from these seven-snail species, which were not clearly seen from the Coomassie Blue-stained gels. According to the mass spectrometric results, a total of 2,820 different peptides from the mucus samples were identified and 1,317 of these (47%) were found in the mucus of all species; while each species had 2,445 peptides in average. Cluster analysis of 1,493 different peptides showed unique mucous peptide patterns in each species. Notably, less different peptides were observed among *A. fulica*, *S. siamensis* and *H. distincta*, suggesting similar bioactive peptide contents of these particular three-snail species. These peptidome data provide basic understanding of the snail mucus and potential bioactive peptides will be further experimentally characterized for pharmaceutical and cosmetic applications.

### Biography

Viroj Tachapuripunya has completed his Bachelor's degree from Department of Genetics, Faculty of Science, Kasetsart University, Bangkok, Thailand and is studying Master's degree at Kasetsart University. He has been a Research Assistance at Dr. Teerasak E-kobon Research Group.

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