

Freshwater Pollution Biology: Apple snail's proteome response to pollution.



Pomacea canaliculata is an invasive fresh water snail native to South America but has become a pest in Asia. This species has three attributes that make it suitable for use in environmental monitoring: it is widespread, its juveniles are sensitive to pollutants, and its adults can accumulate pollutants to high levels. However, there is no information about the proteomics responses of this snail to pollutants. This study aims to provide information on the protein expression during the normal early development of this snail, and explore the changes in its protein expression profile after exposure to pollutants. The information will contribute to the development of biomarkers for environmental monitoring using this species. The research project is divided into two parts: 1) embryonic development of the snail with emphasis on shell formation, torsion and organogenesis, and 2) toxicological study of the most sensitive stages of the development. I will also investigate the proteome of the perivitelline fluid. I expect that some protective neurotoxic proteins and thermal-stable proteins will be identified by using cross-species identification strategy.