

BIOCHEMICAL COMPOSITION CHANGES IN DEVELOPING OOCYTES OF THE GOLDEN APPLE SNAIL

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The golden apple snail has a short reproductive cycle and is capable of reproducing year-round [1]. However, the oocyte biochemical change during development has never been studied in depth. This study investigated the developing snail oocyte biochemical components using Synchrotron-Fourier Transform-Infrared (FTIR) microspectroscopy. Spectral peaks of amide I and amide II were lowest in previtellogenic oocytes but were higher in vitellogenic oocytes. The amide I and amide II spectral peaks were lower in mature oocytes compared to vitellogenic oocytes but still higher than the previtellogenic oocytes. Previtellogenic oocytes exhibited stronger absorbance units of β - sheet protein than either vitellogenic or mature oocytes. Vitellogenic oocytes had the highest spectral peak of nucleic acid whereas the lowest peak was in mature oocytes. Carbohydrate/glycoprotein spectral peaks appeared to increase from the previtellogenic oocyte to the vitellogenic oocyte. However, the spectral peak of carbohydrate/glycoprotein was lowest in mature oocytes. Thus, biochemical components change during the golden apple snail oocyte developmental process.

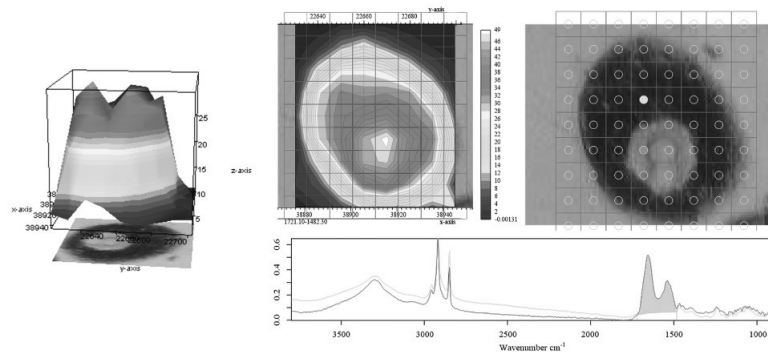


Figure 1 : Map of absorption at $1,657\text{ cm}^{-1}$ and $1,541\text{ cm}^{-1}$ of a vitellogenic oocyte

Reference;

[1] J. Liu J; Y.J. He; J.C. Tan; C.X. Xu; L. Zhong; Z.G. Wang; and Q.G. Liao, "Characteristics of *Pomacea canaliculata* reproduction under natural conditions," *Ying Yong Sheng Tai Xue Bao*, 23, 559-565 (2012).