

Pramote Chumnanpuen 2006: Morphological Development of Glochidia in Artificial Media Culture through Juvenile of Freshwater Pearl Mussel, *Hyriopsis (Hyriopsis) bialatus* Simpson, 1900. Master of Science (Cell and Molecular Biology), Major Field: Cell and Molecular Biology, Department of General Science. Thesis Advisor: Associate Professor Kannika Chatchavalvanich, M.S. 94 pages. ISBN 974-16-2354-2

The objectives of this study were to observe the morphological development and to identify the sequences of organogenesis from glochidia to the juvenile stage of freshwater pearl mussel, *Hyriopsis (Hyriopsis) bialatus*. Larvae of freshwater pearl mussel, *H. (H.) bialatus*, were cultured in artificial media at the controlled temperature of 25 °C, making successful transformation within 10 days. The larvae samples were collected every two days of glochidia development and subjected to histological treatment. Tissue blocks were cut at 5-6 µm thick using the rotary microtome and stained with hematoxylin and eosin, periodic acid Schiff-hematoxylin, and Masson's trichrome. The specimens were examined under a light microscope. There were three types of cell masses developed at this stage; ventral plate (the foot rudiment), lateral pits (the gill rudiment), and oral plate or endodermic sac (origin of the digestive tract). The ventral plate gave rise to two foot lobes fused to be one lobe. The gills were developed from the lateral pits next to the ventral plate, forming a pair of gill buds, became elongated and turned into gill bars. The digestive tract began with the mouth formation, by invagination of the oral plate or endodermic sac and formed the tube underneath the growing foot. *De novo* development of the juvenile adductor muscles, both on anterior and posterior side, were independently formed. A mushroom body protruded itself into the mantle cavity and remained there throughout the transformation period. A supporting band located between the inner layer of larval mantle and the inner shell surfaces might act as a skeletal-like structure of larvae. However, other rudimentary organs such as pericardium, kidney, heart or nervous ganglia were not observed in glochidia or early juvenile.

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