Morphological Changes During Transformation of the Glochidia Larva of Freshwater Pearl Mussel, *Hyriopsis (Hyriopsis) bialatus* Cultured in Artificial Media

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The morphological development and the sequences of organogenesis from glochidium to the early juvenile stage of the freshwater pearl mussel, *Hyriopsis bialatus*, were observed. Mature glochidia of *H. bialatus* were cultured in an artificial medium consisting of M199, fish plasma (*Cyprinus carpio*), and antibiotics/antimycotic at a ratio of 2:1:0.5 (v/v). Larval samples were collected every two days during glochidia development and were subjected to histological processing. Three types of cell masses developed during this period: the ventral plate (the foot rudiment), lateral pits (the gill rudiment), and the oral plate or endodermic sac (the origin of the digestive tract). The ventral plate gave rise to two foot lobes which fused into one lobe. The gills were developed from the lateral pits next to the ventral plate, forming a pair of gill buds that became elongated and turned into gill bars. The digestive tract began with mouth formation by invagination of the oral plate (or endodermic sac) and formation of a tube underneath the growing foot. Several controversial aspects of organogenesis have been inferred, e.g. *de novo* formation of the anterior and posterior juvenile adductor, the fate of the mushroom body structure, and foot lobe formation from two separate precursor lobes. A mushroom body protruded into the mantle cavity and remained there throughout the transformation period.

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