

Molecular changes induced by metamorphosis in larvae of the prosobranch *Concholepas concholepas* Bruguiere (Mollusca; Gastropoda; Muricidae)

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Abstract

Metamorphosis may be the most critical point in the life history of marine molluscs. Excess potassium was used to trigger the metamorphic process in competent larvae of the prosobranch *Concholepas concholepas* Bruguiere. The specific, irreversible stimulation of complex morphogenetic events by this exogenous factor was used to study some molecular changes that occur during metamorphosis. Results show that metamorphosis entails several molecular changes, including: (1) a modification in the pattern of protein synthesis measured by incorporation of [³⁵S]methionine to newly synthesized polypeptides, (2) an increase of [³⁵S]methionine incorporation in heparin-binding proteins or the induction of heparin-binding proteins (i.e. growth factors?), (3) a decrease (20 times) in the larval levels of the second messenger cyclic AMP, and (4) the appearance of a new form of the neurotransmitter-related enzyme, acetylcholinesterase (AChE). To our knowledge this is the first attempt to characterize some of the molecular changes that take place during molluscan metamorphosis.