# HISTOLOGICAL STRUCTURE OF INTEGUMENT AND MUCOUS GLAND OF *Anguilla bicolor* (McClelland, 1844) ON VARIOUS LIFE STAGE

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## Abstract

*Anguilla bicolor* migration on it life stage Changes in the environment during the process caused changes in morphology, physiology, and development of certain organs as a form of adaptation. One organ that is developing is its integument, both its constituent layers and its derivatives, the goblet cells that function to secrete mucus. Changes in integument layer thickness, morphology of goblet cells, and the composition of muscle and mucus *A. bicolor* are not only influenced by environmental factors but are also influenced by their life phases. This study aimed to study the integument structure and mucosal glands of *A. bicolor* life phases. Observation of the integument histology structure, morphology and goblet cell population was carried out using the paraffin method, which then stained with HE, MAF, and PAS, respectively. Proximate tests were performed to analyze the protein content of muscles and mucus. Moreover, ELISA test was carried out to analyze the testosterone hormone on the mucus. The data were analyzed in a comparative descriptive manner using One-Way ANOVA and a further analysis with Duncan test at a significance level of P <0.05. Results showed that the integument layer thickness were increases in dependent manner with the fish life phase. Moreover, the anterior part of the body was thicker and has broader goblet cell area compared to the posterior body part. In addition the dorsal, lateral, and ventral parts of the body *A. bicolor* also have exhibit variation of integument thickness and goblet cell area. *A. bicolor* live phase showed different composition of muscles and mucus with varying contents and levels, as well as different concentrations of the hormone testosterone.

Keywords: *Anguilla bicolor*, integument, life phase, mucous gland, testosteron hormone.