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Ashley Shah  
*Illinois Wesleyan University*

Brian Walter, Faculty Advisor  
*Illinois Wesleyan University*

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PAX9 GENE EXPRESSION IN MOENKHAUSIA SANCTAEFILOMENAЕ

Ashley Shah and Brian Walter*
Biology Department, Illinois Wesleyan University

The Pax family of genes function as transcription factors, playing an essential role during development, such as migration of neural crest and differentiation of tissues (Lang et al., 2006). Pax9 is a part of the Pax family and is critical in embryonic development in vertebrates, specifically in the cartilages and bones of the vertebrae and craniofacial skeleton (Peters et al., 2008). Our research investigates the expression of Pax9 in the red-eye tetra, Moenkhausia sanctaeofilomenae. Pax9 was first amplified via reverse transcriptase – polymerase chain reaction and subsequently cloned. Pax9 was then developed into a probe for in situ hybridization in order to view gene expression. Our results have shown that Pax9 is expressed in the pharyngeal arches, trunk sclerotome, and tail in different development stages of the tetra. Studying expression of the Pax9 gene provides insight to the specific embryonic development of tetras and allows for further studies such as a detailed, comparative analysis of the skeletogenic genes involved in fish development.