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The distribution of alkaline phosphatase and carbohydrates in early turkey (*Meleagris gallopavo*) embryo

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Abstract

In developmental studies of the embryo, it is very important to find suitable methods for the characterization of various tissue. This study to determine suitable markers in the development of the nervous system and other organs in turkey embryo to be a clue for exploring the role of alkaline phosphatase in the development of an embryo,perception of organ function after birth, and studies of embryogenesis of the nervous system.. The embryos from stages 19 to 31 Hamburger & Hamilton, were studied by histochemical and immunostaining techniques. The results showed that the stage-specific embryonic antigen-1 expression was restricted to the spinal cord, and other organs were negative. At stages, 19, 20 and 29 Hamburger & Hamilton, alkaline phosphatase reaction was either negative or weakly positive in embryonic organs. At stages 30-31 Hamburger & Hamilton, a strong alkaline phosphatase reaction was observed in the spinal cord, mesonephros, gonad, dorsal aorta, and liver sinusoids. Sections stained with periodic acid-Schiff confirmed the presence of glycogen in the heart, mesonephros, gonad, notochord, chondrocytes, and weakly in the ventral horn of the spinal cord. This study demonstrates that alkaline phosphatase reaction and the stage-specific embryonic antigen-1 expression are effective markers for developing the nervous system in turkey embryos. Also, we observed that both periodic acid-Schiff and alkaline phosphatase staining are useful methods to study other organs in turkey embryos.

Key words: Alkaline phosphatase, Histochemistry, Immunohistochemistry, Development, Turkey embryo

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