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Tissue-Specific Isoenzyme Variations in Tilapia Fish, *Oreochromis niloticus*

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ABSTRACT

Native polyacrylamide gel electrophoresis have been used to analyze malate dehydrogenase (*MDH*), acid phosphatase (*AcpH*) and peroxidase (*Px*) isoenzymes in different tissues (liver, kidney, muscle and heart) of the tilapia fish, *Oreochromis niloticus* in order to study the tissue specificity of these isoenzymes. Three, two and one fractions have been recorded respectively for the three isoenzymes in different studied tissues. The *MDH-1* and *MDH-2* have been expressed only in muscle and heart while *MDH-3* has been expressed in all studied tissues. The percentage amount of *MDH* in general varied significantly between muscle and different studied tissues. With respect to acid phosphatase, the percentage amount of the total enzyme showed significant difference between liver and muscle and that this variation may be due to higher gene activity in liver. Peroxidase isoenzyme was recorded in liver and heart only with significant increase in liver. The kidney was the least among the studied tissues in showing gene expression for the studied isoenzymes and therefore, liver, heart and muscle tissues are better applicable in studying the isoenzymatic profiles for fish physiology and systematics.

KEYWORDS

Oreochromis niloticus; Malate Dehydrogenase; Acid Phosphatase; Peroxidase; Isoenzymes

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