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In vitro Effects of Some Anthelmintics on the Malate Dehydrogenase and Lactate Dehydrogenase Enzyme Activities of Taenia Saginata

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Abstract: Malate Dehydrogenase (MDH) and Lactate Dehydrogenase (LDH) activities were demonstrated in the mitochondrial and cytosolic fractions of an intestinal cestode, *Taenia saginata*, and then the in vitro effects of three anthelmintics, albendazole, niclosamide, and piperazine on these enzymes were investigated. The V_{max} and K_m values of MDH were found to be $3.00 \mu\text{mol (min mg protein)}^{-1}$ and 0.0166 mM respectively. In vitro addition of albendazole and niclosamide increased the V_{max} value of MDH, whereas it decreased K_m value of MDH ($p < 0.05$). The V_{max} and K_m values of LDH were found to be $0.028 \mu\text{mol (min mg protein)}^{-1}$ and 0.055 mM respectively. Albendazole and niclosamide solutions increased the V_{max} value of LDH ($P < 0.05$). K_m value of LDH was reduced albendazole and niclosamide solutions ($P < 0.05$). Piperazine affected neither MDH nor LDH activities. These results suggest that the activity of MDH and LDH in *T. saginata* are activated and the carbohydrate metabolism of this parasite is changed by albendazole and niclosamide.

Key Words: Malate Dehydrogenase, Lactate Dehydrogenase, *Taenia saginata*, albendazole, niclosamide, piperazine.

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