

**A comparative biochemical study of the  
interaction of some trypanocides with  
rat tissue cellular systems.**

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**Abstract:**

The effects of three trypanocides (tryparsamide, novidium and berenil) on rat liver and kidney were studied with a view to understanding the site of primary injury to the cell resulting from their administration. Four enzymes which are exclusively located in specific regions of the cell were used to monitor the regions affected by the drugs. The results obtained showed that administration of each of the three drugs resulted in massive increase of alkaline phosphates activity and a very marked inhibition of lactate dehydrogenase activity in both tissues. There was no significant effect on the lysosomal enzymes both in vivo and in vitro.

These results indicate that tryparsamide, novidium and berenil ellicit their action on the cellular system of both liver and kidney in similar ways when administered to rats. Inhibition of lactate dehydrogenase activity which is located in the soluble fraction of cytoplasm may lead to accumulation of pyruvate in the cell. The massive increase of alkaline phosphates activity in the tissues may also lead to indiscriminate hydrolysis of phosphate esters needed for vital activities in the cell.

**Keywords:** Indiscriminate hydrolysis/ Phosphate esters/ trypanocides/ lactate dehydrogenase

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