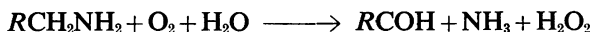


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### A possible reaction mechanism for the enzyme histaminase

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Pig plasma histaminase is a copper-pyridoxal-phosphate enzyme (Buffoni & Blaschko, 1964; Blaschko & Buffoni, 1965; Buffoni, 1966) which catalyses the general reaction:



Direct evidence for the formation of a Schiff base between enzyme and substrate in the first step of reaction has been obtained using  $^{14}\text{C}$ -histamine. Under anaerobic conditions the enzyme binds 3 moles of histamine per mole of protein, forming an imine bond. The borohydride-reduced Schiff base, pyridoxyl-histamine-5'-phosphate has been isolated and identified by paper and thin-layer chromatography and by fluorescence properties (Buffoni, 1966).

Direct evidence that water is not involved in the ammonia formation has been obtained by using  $^3\text{H}_2\text{O}$  and isolating the ammonia formed in the reaction (Buffoni & Della Corte, 1967).

Electron spin resonance (ESR) experiments have shown that the copper remains divalent in the oxidized and reduced enzyme (Buffoni, Della Corte & Knowles, 1968) although there were changes in ESR line shape after reduction and of the ESR signal throughout the catalytical cycle (quench flow method).

These and other experiments on the kinetics of the reaction suggest a mechanism of reaction for the enzyme histaminase in which the Schiff base formation represents the rate limiting step.

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### Immunosuppressive activity of methotrexate and arabinosyl cytosine in mice bearing L1210 leukaemia

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We have studied the inter-relationship between chemotherapy and immunity in a tumour-host system in which, in addition to the possible tumour-specific antigenicity,