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Synthesis and Kinetic Studies of a Model Enzyme

by

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PART IV

SUMMARY

The inability to demonstrate the desired effect of rate enhancement due to the specific attraction of various structural features on the catalyst and substrate probably is due to the flexibility of the catalyst. There are too many possible imperfections in the model catalyst to accurately designate the reason for non-reactivity.

An enzyme no doubt requires the participation of several distinct functional groups and may require the participation of one or more coenzymes. The substrate is usually very small as compared to the enzyme; in this case the substrate and the model enzyme were closely related in size. The bulk of the amino acids in an enzyme may serve to provide an environment that is essential for three-dimensional changes needed in the formation of a transition state; a model enzyme has no such real environment.

A negative result, then, emphasizes the necessity of having more than just the attracting forces and participating amino acids for catalysis. A positive result might have afforded the possibility of detecting such an "environment."

This study provided me with an insight into the methods and complexities of peptide chemistry and served as an introduction to enzyme chemistry.