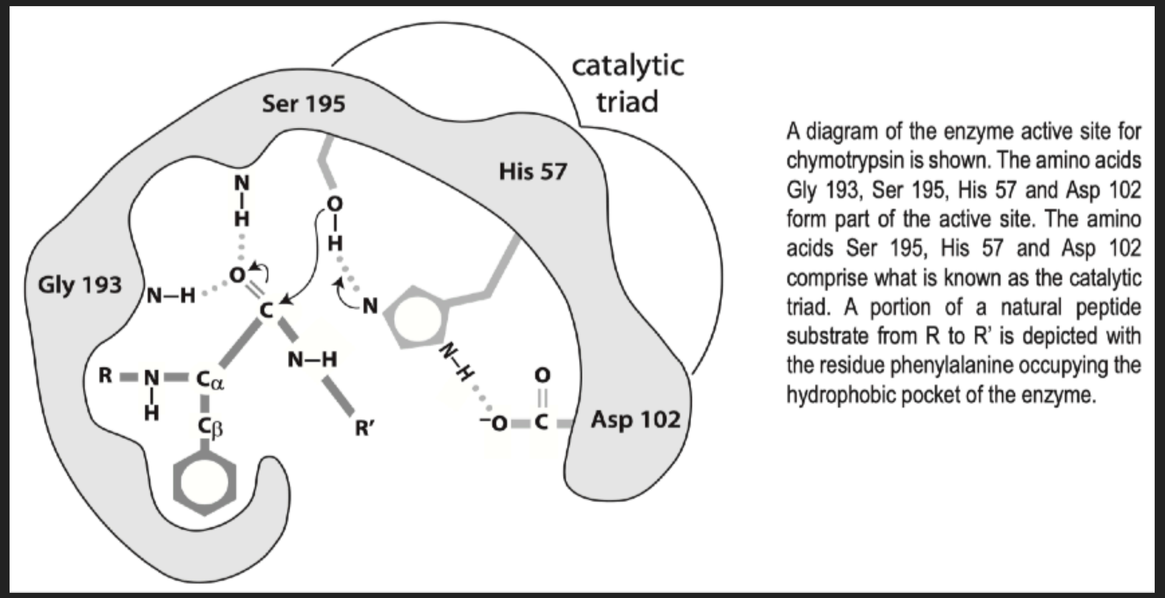
POST-ACTIVITY

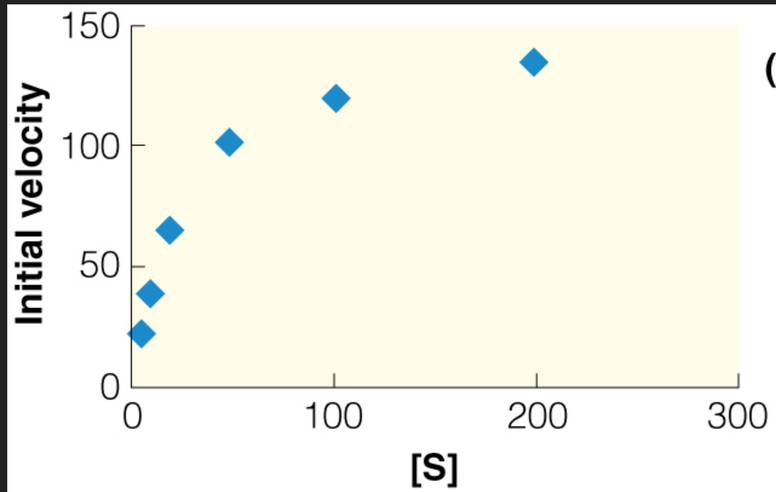
- N-Acetyletyrosine Ethyl Ester has the Higher Affinity for the Enzyme
  - It has the lowest K_M value
- Why does the shape of the substrates affect the affinity?
  - Tyrosine resembles the phenyl group from the phenyl alanine , so it fits in the substrate pocket.
- Just by looking at the structure , we cannot determine V_{max}
  - We need the rate constants, k_{cat} in order to calculate V_{max}



- The K_M for the reaction of chymotrypsin with N-Acytlvaline Ethyl Ester = $8.8 * 10^{-2}$ M
- The K_M for the reaction of chymotrypsin with N-Acytltyrosine Ethyl Ester = $6.6 * 10^{-4}$ M

TESTING THE MODEL

- Various reactions are performed at known Enzyme and Substrate concentrations.
- The initial rates of the reactions are plotted against the substrate concentrations
- If the graph is hyperbolic, then it can be assumed the enzyme obeys the Michaelis-Menten model.
  - We can calculate K_M and V_{max}



(b) Initial rate data, determined as described in (a), are plotted as a function of the substrate concentration. The enzyme appears to obey the Michaelis–Menten kinetic model (compare this plot to Figure 8.21).