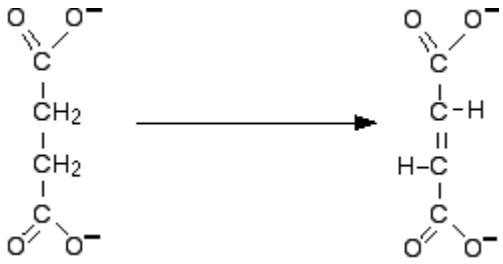
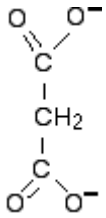
PROTEINS: ENZYME INHIBITORS

1. The Chemguide page has the following example of a competitive inhibitor. It relates to the enzyme succinate dehydrogenase, which catalysis the conversion of succinate ions to fumarate ions.



Malonate ions are a competitive inhibitor of this enzyme reaction. Malonate ions are 

a) Use this example to explain what is meant by a *competitive inhibitor*.

b) Competitive inhibition is reversible. Explain what that means. How would you use this to overcome the inhibition to get the reaction you want?

2. a) Some inhibitors are *non-competitive*. Explain in general terms how these inhibitors work.

b) Is non-competitive inhibition reversible or non-reversible. Explain your answer.

c) Heavy metal poisoning by ions such as Ag^+ or Hg^{2+} is an example of non-competitive inhibition. Explain briefly how these ions have an effect on enzyme structures which causes non-competitive inhibition.