Sometimes even enzymes are sated and have enough!

Need no more!

① Match the fitting words and phrases.

auf einer Achse auftragen 1x | Bindungsstreben 1x | Geschwindigkeit 1x | sich trennen 1x | steigern 1x | Sättigung 1x | umsetzen 1x

saturation

to plot against

affinity

to convert

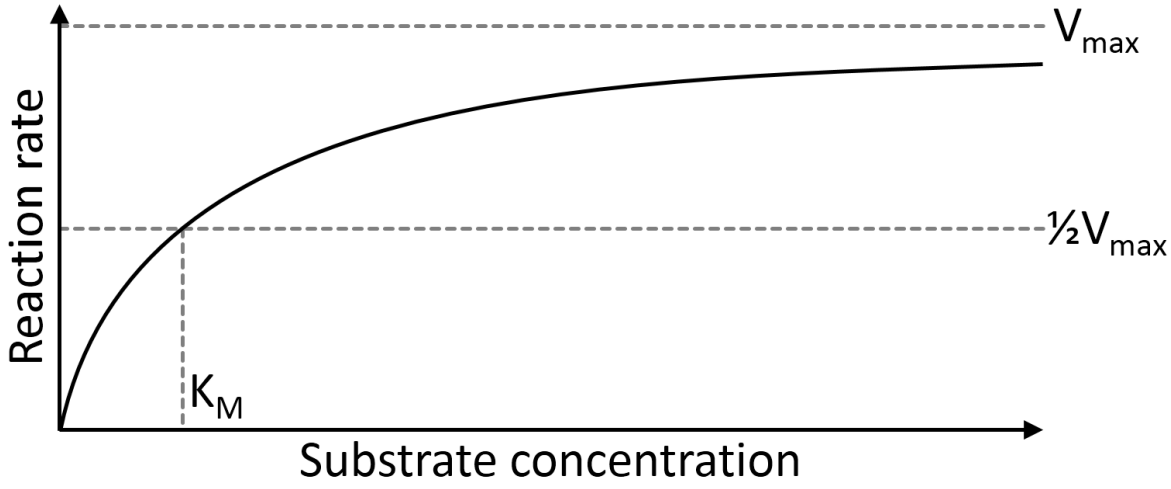
to enhance

velocity

to dissociate

② Below you find sentences describing a specific moment in enzyme activity which is also termed reaction rate. Put the sentences into the correct order. (1-6)

- The active site catalyzes the reaction producing the product. This is the rate limiting step.
- The substrate binds at the binding site of the enzyme. This rate can vary and depends on the amount of substrate. The more substrate the quicker both meet.
- The enzyme-product complex dissociate to free product and enzyme.
- The two molecules form the enzyme-product complex.
- The enzyme is ready for the next catalysis reaction.
- The two molecules form the enzyme-substrate complex.



Michaelis Menten curve - the reaction rate of an enzyme depends on the substrate concentration, the number of enzymes stays constant

③ Match the texts with a suitable point in the graph.

( ) The reaction rate of the enzymes starts off slowly. This is caused by a small amount of substrate. The affinity between both molecules is low.

( ) A lower KM means a high affinity between enzyme and substrate.

( ) A higher KM means a low affinity between enzyme and substrate.

( ) The conversion rate of the enzymes present cannot be further enhanced if the substrate amount is already very high. All enzymes are located in the enzyme-substrate complex, they are saturated.

( ) The reaction rate of the enzymes increases due to a higher amount of substrate. The affinity of both molecules becomes higher. The existing enzymes now convert more substrates into products in the same time.

( ) If the substrate concentration corresponds to the KM value, half of the originally present enzymes are present in the form of enzyme-substrate complexes. The other half is free.

( ) The Michaelis-Menten constant KM indicates the substrate concentration at which half the maximum reaction rate of the enzyme is reached.

( ) The half-maximum rate of substrate conversion is reached.