

Mechanism of Enzyme Action

→ "CATALYSIS"

PRO-ENZYME

- Pepsinogen → Pepsin
- Trypsinogen → Trypsin
- Chymotrypsinogen → Chymotrypsin

APOENZYME

- Purely Protein
- Holoenzyme - C.F

HOLOENZYME

- Complete Enzyme
- Apoenzyme + C.F

MODELS OF ENZYME ACTION

LOCK & KEY

Emil Fischer
(1894)

- Non-Regulatory Enzymes
- Sucrase, Maltase
- Urease, Lipases

Rigid Site
Unchangeable
Non-Flexible

Active Site

Hand/Glove

INDUCE FIT

Non-Rigid
Changeable
Flexible

Koshland
(1959)

- Regulatory Enzymes
- Hb (Haemoglobin)



→ Transition States

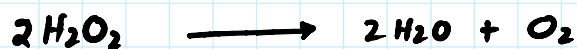
→ Intermediate States

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- GEOMETRICAL CHANGES (Shape change)
- ENERGY CHANGES (Activation Energy ↓↓)



$\Delta E = 86 \text{ KJ mol}^{-1}$
(Without catalyst)
 $\Delta E = 1 \text{ KJ mol}^{-1}$
(With catalyst)