

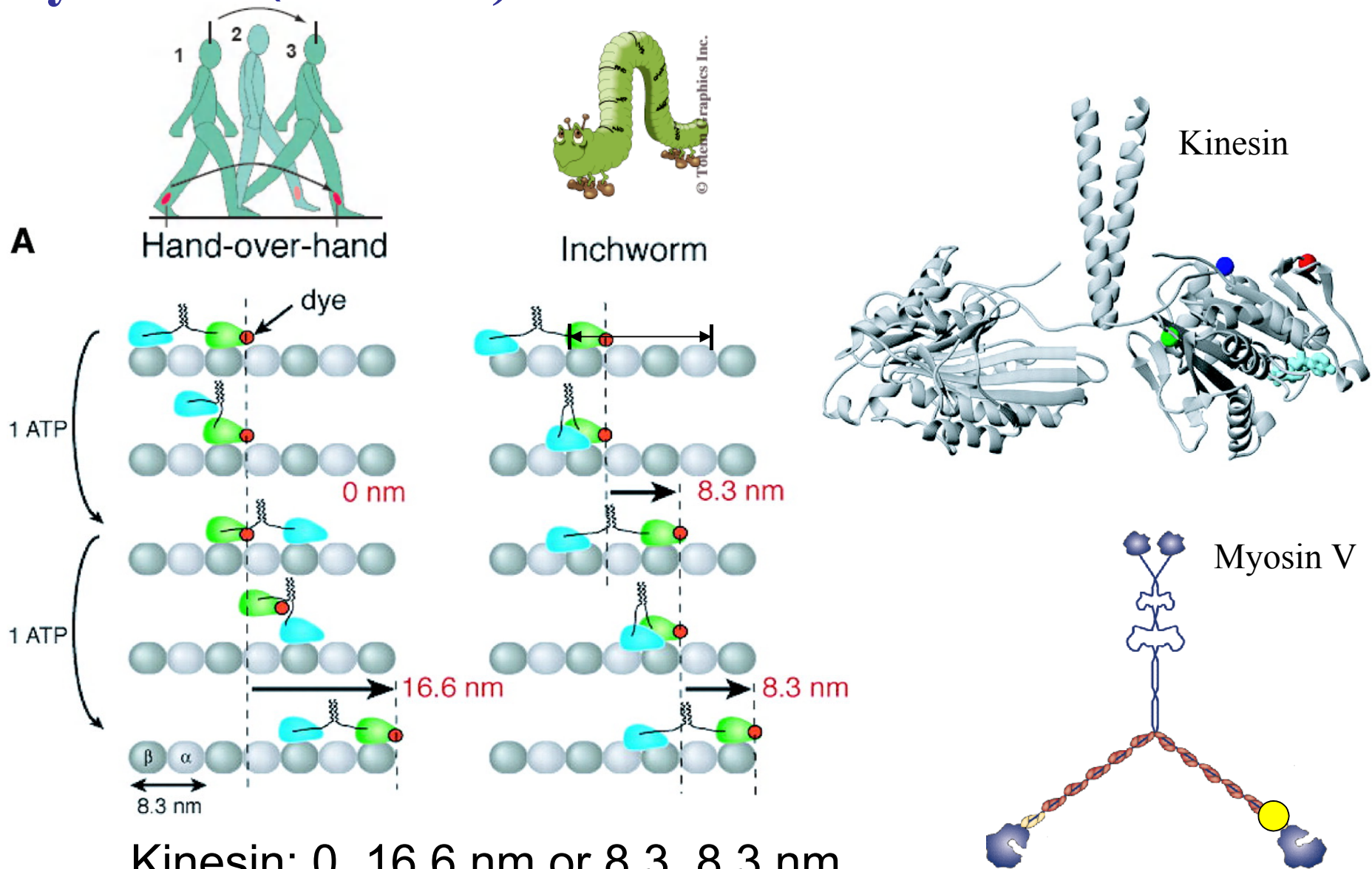
Site-Directed Mutagenesis to Isolate and Mutate DNA (for FIONA)



FIONA

**Fluorescence Imaging with One Nanometer Accuracy
(1.5 nm, 1-500 msec)**

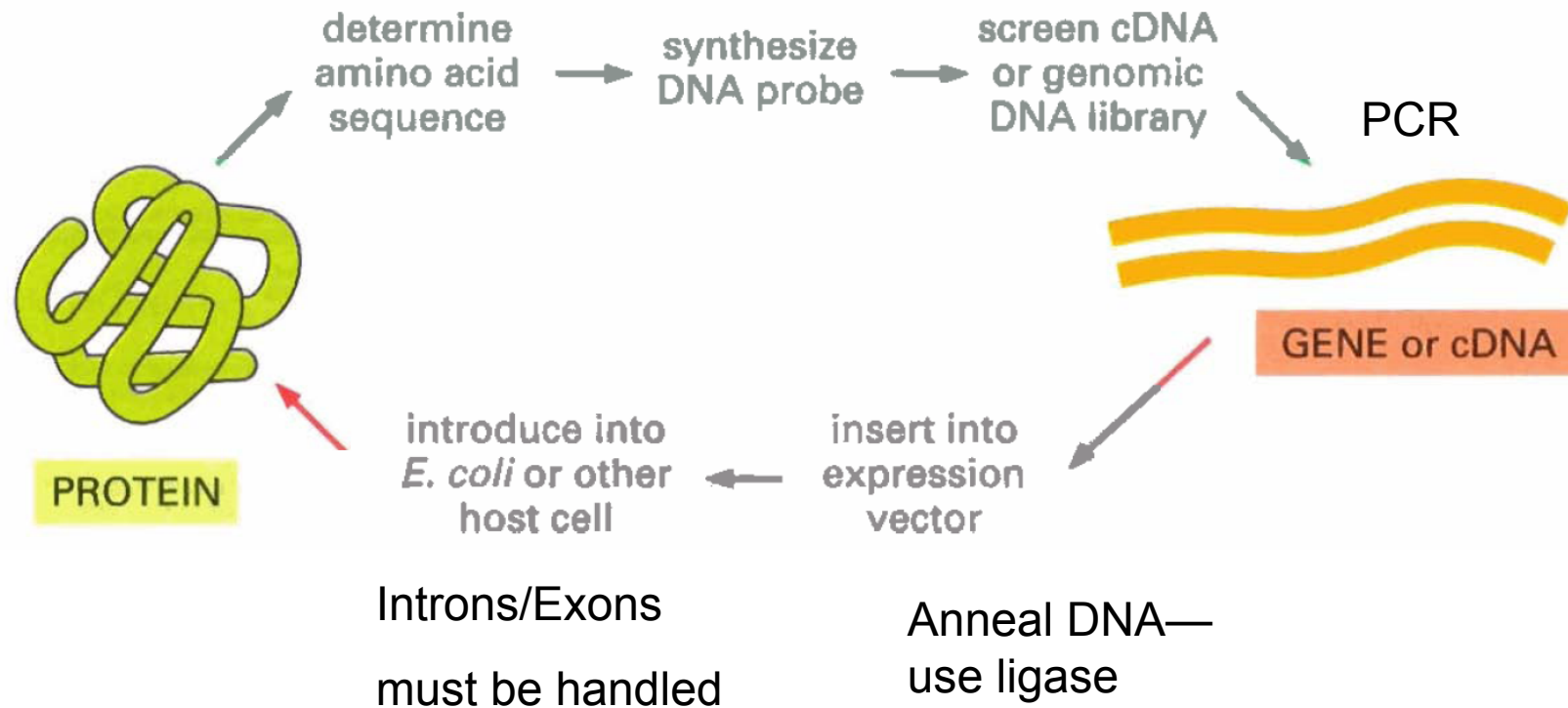
Myosin V (Kinesin): Hand-over-hand or Inchworm?



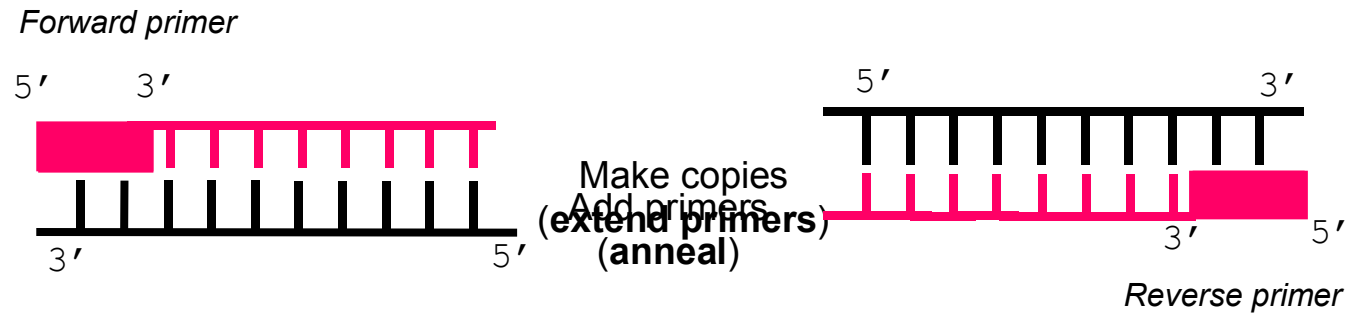
Kinesin: 0, 16.6 nm or 8.3, 8.3 nm

Myosin V: 0, 74 nm or 37, 37 nm

From Protein to Mutated Protein

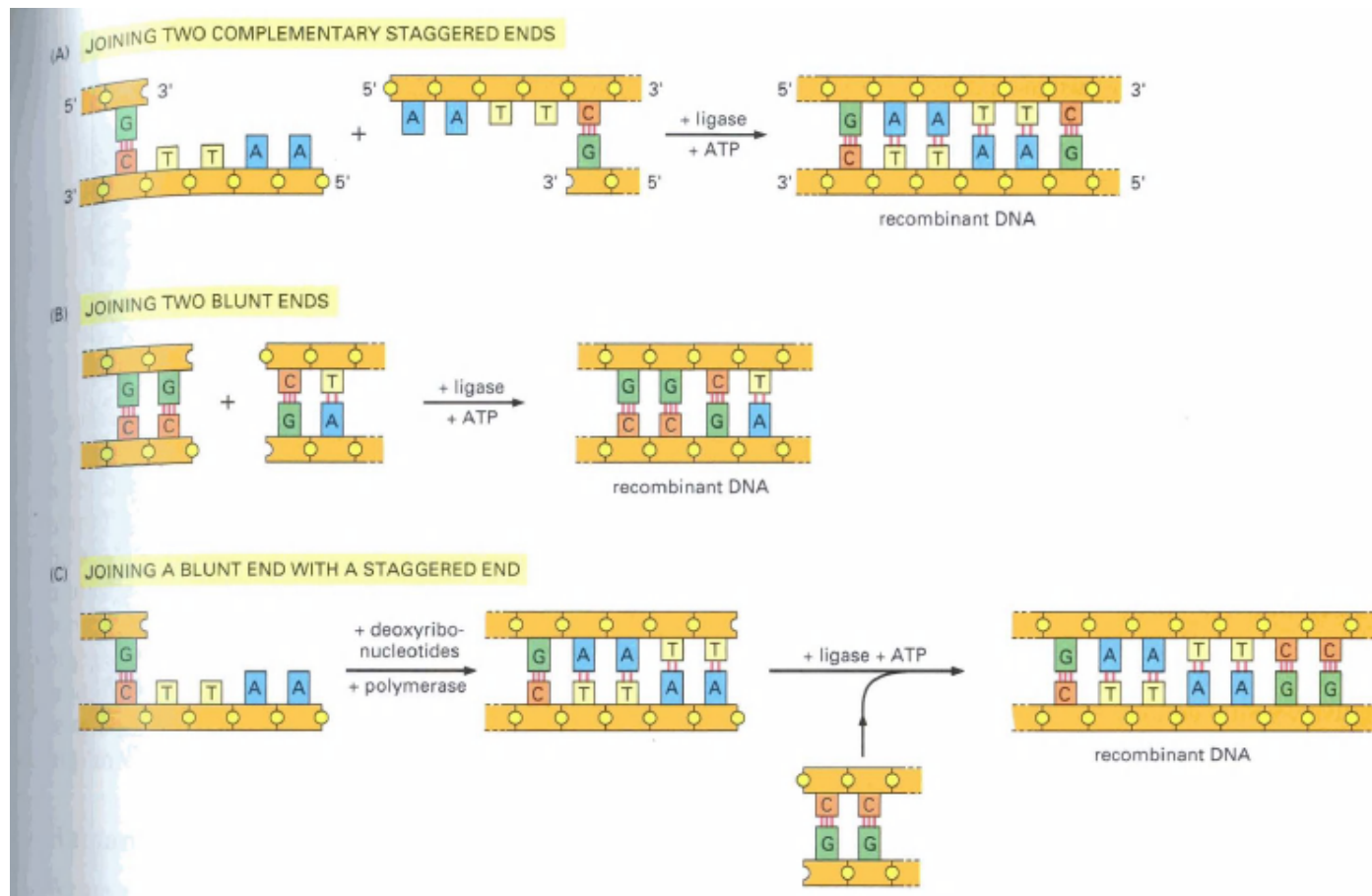


DNA Amplification with the Polymerase Chain Reaction (PCR)



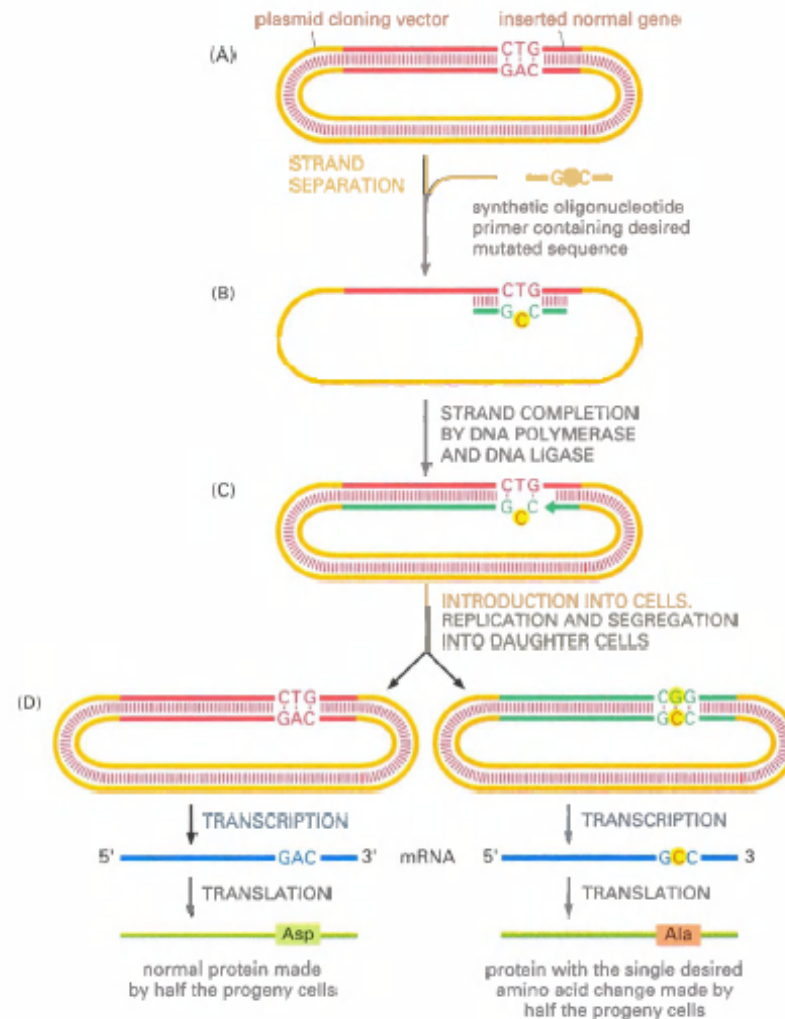
Ligase:

How to combine two DNAs together



Site-directed mutagenesis

(Modifying protein to make Cys-light, e.g.)



Here, changing just one amino acid— can in-fact change many amino-acids at one time.