

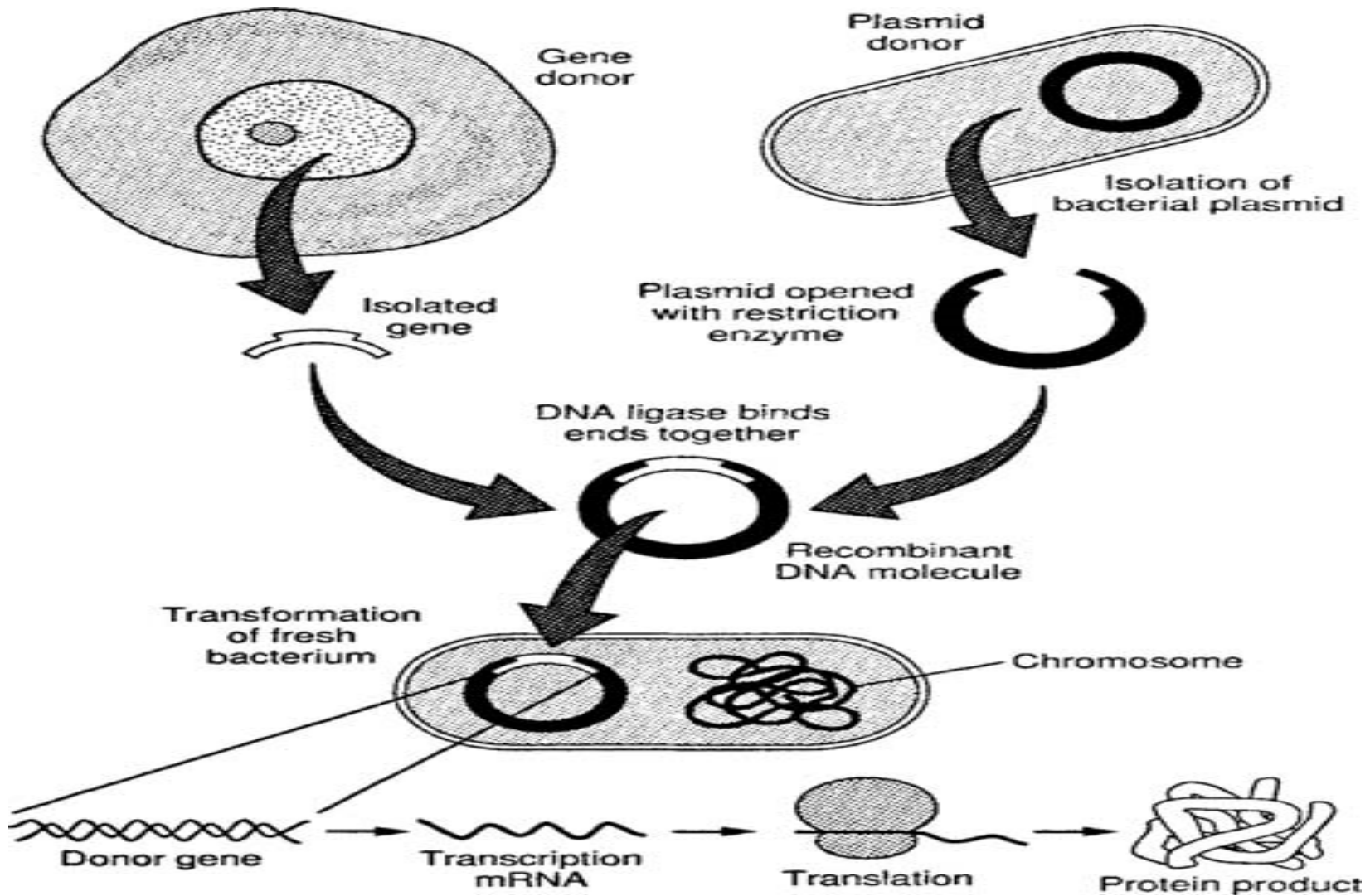
# Biotechnology

- Using live organisms and enzymes from organisms to produce products useful to humans.
- Making bread, curd or wine.
- In vitro fertilization
- Gene synthesis
- Vaccine development

# Two core techniques

- Genetic Engineering: involves introduction of a gene into host, so that phenotype of organisms changes.
- Maintenance of sterile environment

# Recombinant DNA technology



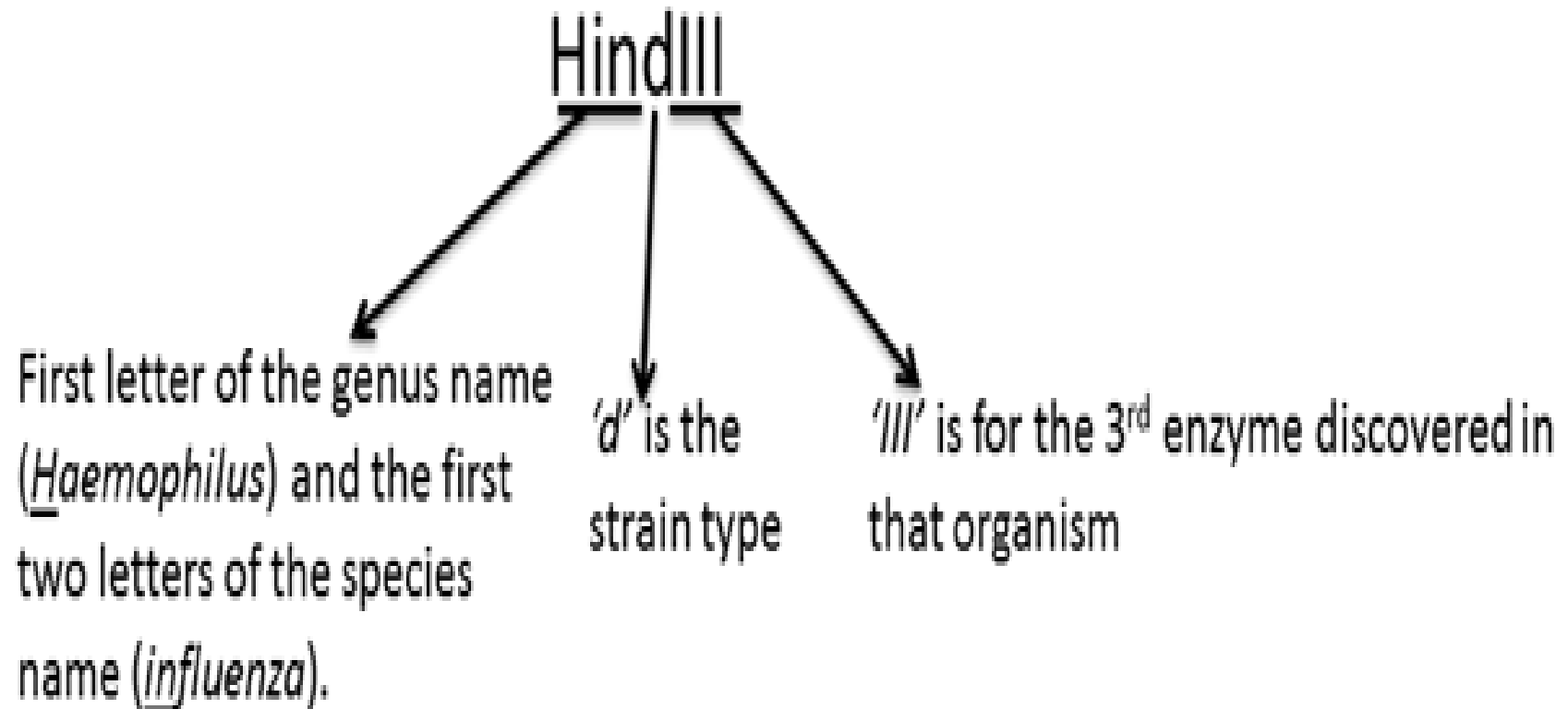
# Tools of RDT

- Restriction enzyme
- Ligases
- Vector
- Host organisms

# Restriction Enzymes

- Restrict the growth of bacteriophages in bacteria
- Restriction site or recognition sequence
- Palindromic sequence: sequence that reads same on the two strands when orientation of reading is kept the same.

# Naming restriction enzymes



# Classes of restriction enzymes

- Exonuclease
- Endonuclease

# Properties of vector

- Origin of replication
- Selectable marker
- Cloning sites

# Insertional inactivation

- Inactivation of marker gene due to insertion of foreign DNA