

# Biotechnology

- Genetic Engineering
  - DNA cloning
    - **Isolation of DNA from one organism and putting it into another**
    - **Use of restriction enzymes**
      - Plasmid
      - Integration in host DNA
    - **Use of bacteria (E. coli)**
    - **Use of viral vectors**

# Uses of Technology

- Protein production
- Pharmaceutical proteins (insulin)
- Vaccines
  - Surface proteins
  - DNA fragments that code for proteins
- Pest resistant plants
- Herbicide resistant plants
  - Plants with improved nutritional value
  - Edible vaccines

# Concerns

- Ethical
- Moral
- Adverse impacts in environment
- Bioterrorism
  
- Confidentiality issues of using DNA from people