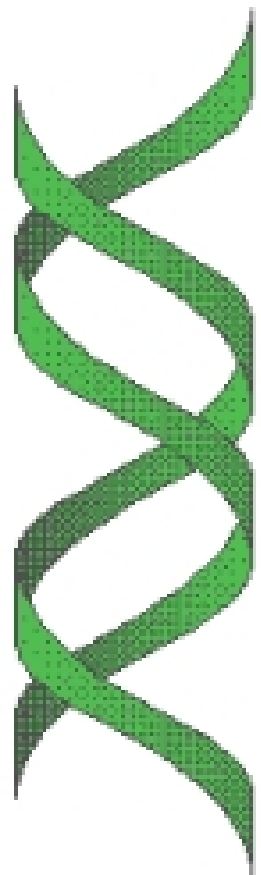
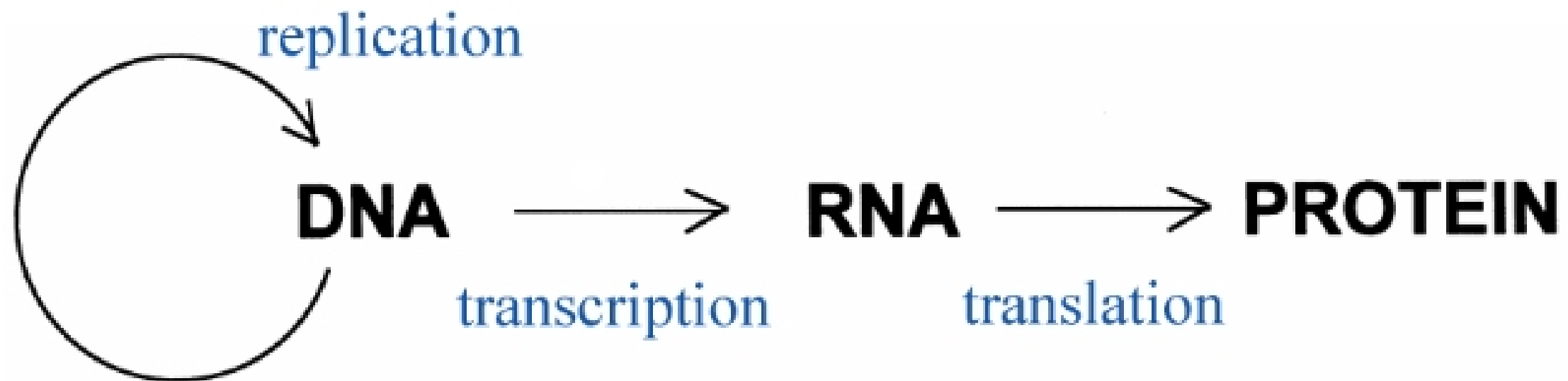


Applications of Biotechnology to Health and Disease

Recombinant DNA,
Gene Therapy,
Molecular Biomarkers,
and Genomics

Molecular Applications



- **possible to manipulate DNA**
 - recombinant DNA technology
 - genetic engineering
 - gene therapy
- **possible to detect and analyze DNA, RNA, protein, etc**
 - biomarkers/diagnosis
 - molecular epidemiology
- **DNA sequencing and genomics**

Recombinant DNA

- possible to recombine or modify DNA in the test tube
- recombinant DNA can be introduced into organisms
- transgenic = organism with DNA from another species

Vectors

- carry the 'target' DNA
- autonomous replication
- plasmids and viruses

