

# Biotechnologies



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## Βιοτεχνολογία Biotechnology

- Systematic Treatment of the Life Arts
- Webster's New College Dictionary  
The aspect of technology concerned with the application of scientific and engineering data relating to man and the machine.

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## Healthcare Theories

- Biomedicine
  - Western—The Scientific Method
  - Seek Root Causes (Germ Theory)
    - Viruses & Bacteria
  - Laboratories
  - Treatments
  - Statistics



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## Healthcare Theories

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- Personalistic Systems
  - Soul-based; Religious Ideologies
  - External Good & Malevolent Powers
    - God, Angels, & Saints
    - Ghosts, Spirits, & Demons
  - Life & Death based upon Faith & Fate

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## Healthcare Theories

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- Naturalistic
  - Herbal Remedies (Folk Remedies)
    - Hot & Cold Treatments
    - “Humors”—Body Fluids & Health
    - Willow Bark
  - Biodiversity Treaty, Rain Forests, and Multinational Pharmaceuticals

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## Human Genome Project

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- \$3 Billion (\$2 billion by U.S.)
- 50,000 to 100,000 Genes
- 23 Chromosome Pairs
  - 3 Billion Codes
  - Goal is to define and understand the genetic sequences: RNA⇒proteins

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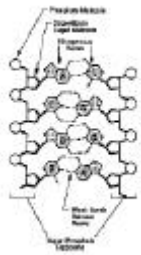
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## DNA—The Building Blocks of Life

- Deoxyribonucleic Acid
- 4 Components
  - Adenine & Thymine
  - Guanine & Cytosine



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## Gee-wiz Statistics

- DNA—3,000,000,000 (3 billion) pairs.
- *Encyclopedia Britannica*—280 million letters.
- *Unabridged Dictionary*—76 million letters equals the DNA sequence of the **smallest** chromosome.
- 46 volumes of each book in **each** cell.

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