Medical Biotechnology And Human Health



Introduction

 Medical biotechnology is the fusion of genetics, cell biology and many other sciences in order to further advances in medicine.



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Why is medical biotechnology important?

- The main reason for medical biotechnology is to prolong life.
- Other reasons are to ease suffering of palliative care patients or to increase accessibility for people with disabilities.



Current Areas of Research

Biotechnology is used to:

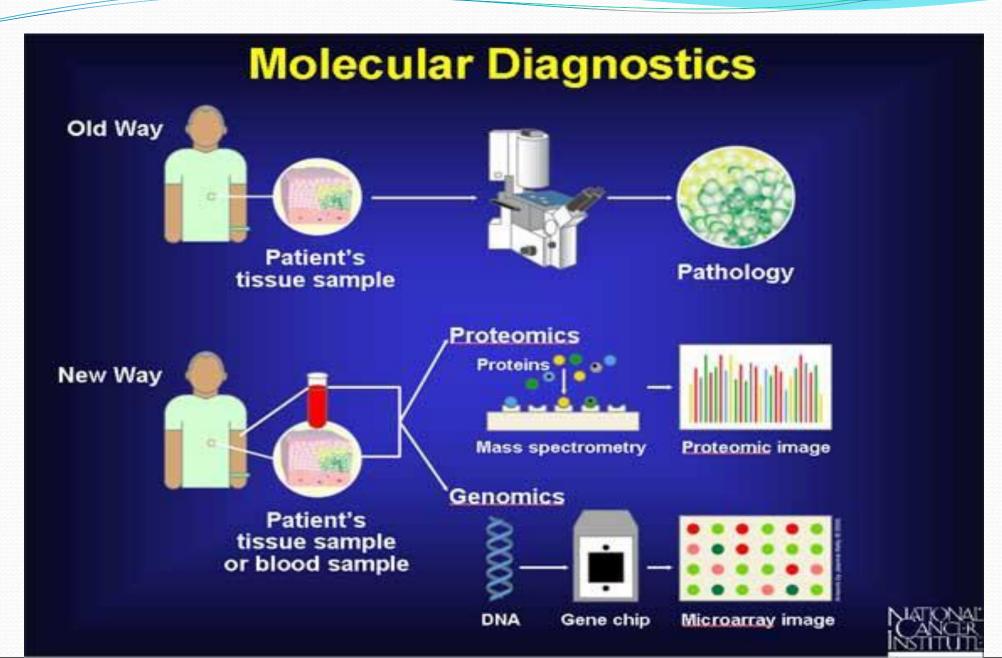
– Diagnose disease

- Prevent disease



- Treat disease

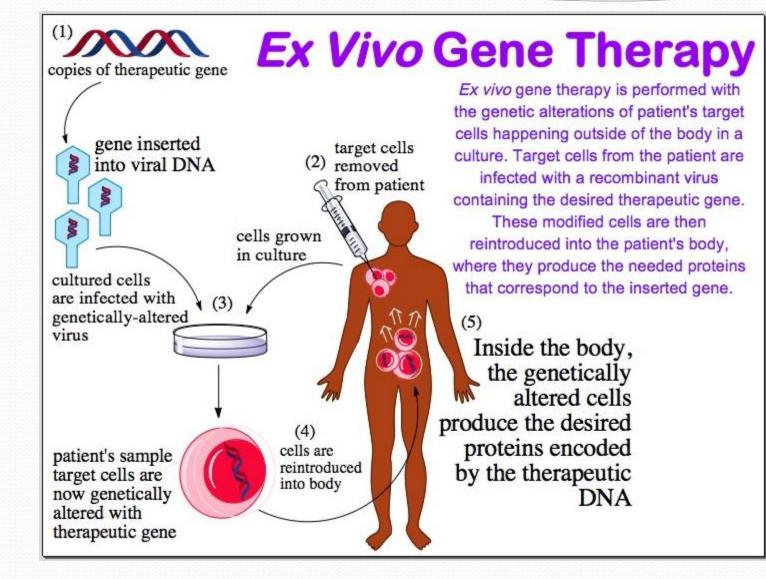
Disease Diagnosis



Edible Vaccines

Recombinant DNA Approaches for Vaccine Production and Transgenic Plants with Edible Vaccines Gene from a human pathogen is inserted into a vector Vector introduced into plant cells Eating banana Leaf segments sprout into whole plants carrying gene from human pathogen triggers immune response to pathogen **Production of Recombinant HB Vaccine** DNA / 02 Hepatitis B Introduction of Virus recombinant DNA Recombinant HB vaccine into a yeast cell veast cell HB antigen producing gene Extraction & purificaion of HB vaccine 08 Recombinant yeast Recombinant 08 cell multiplying and producing HB antigen DNA 02 n fermentation tank Plasmid DNA cut with estriction enzymes Fermentation Bacterial DNA Tank 02 ismid DNA Bacterium HB antigen

How can biotechnology be used to treat disease?



Stem Cells

- A stem cell is a cell that has the potential to become any cell type in the human body.
- Everyone has stem cells, but they are very hard to access.
- The easiest place to get stem cells is from an embryo.

