

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.



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.



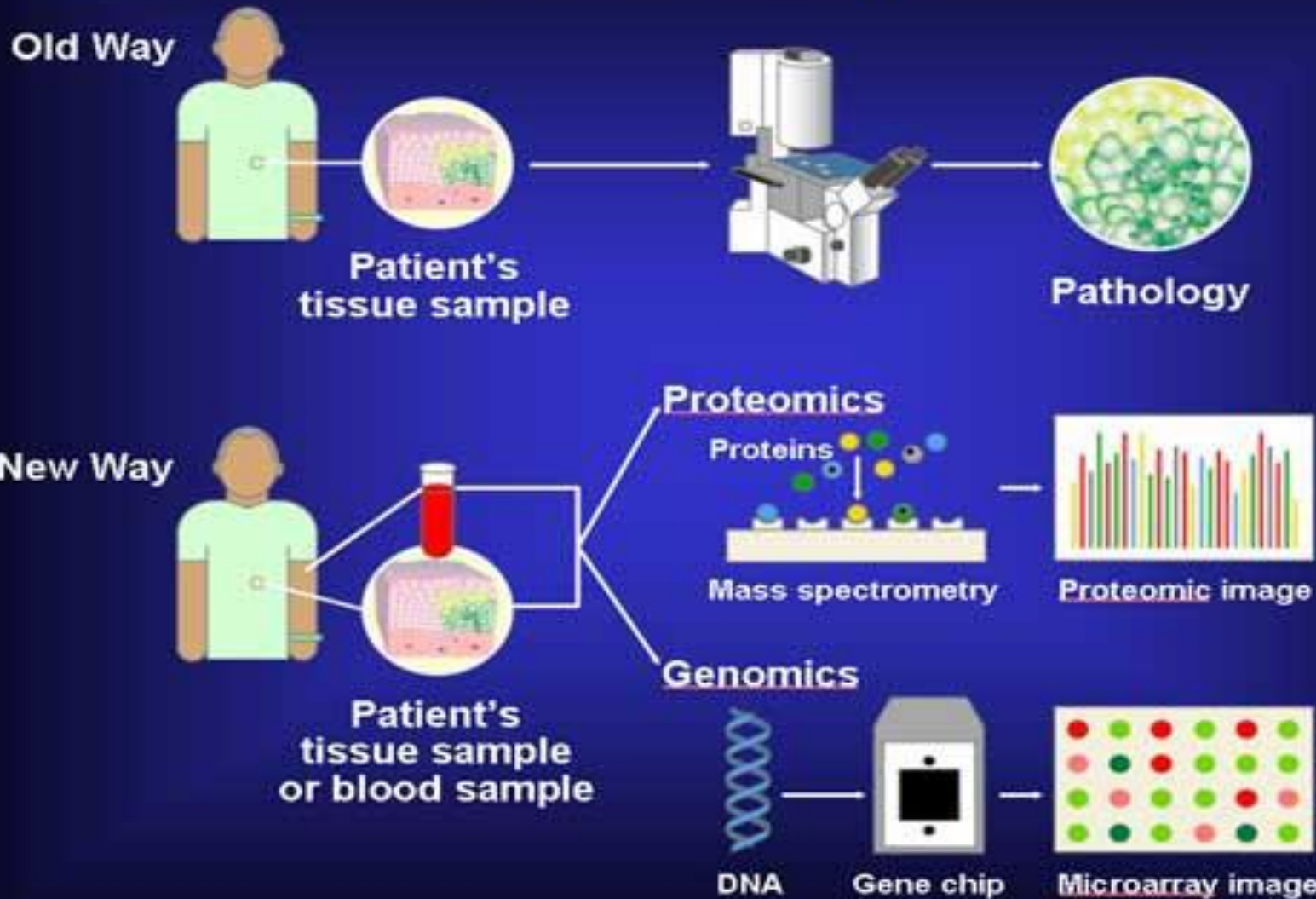
Current Areas of Research

Biotechnology is used to:

- Diagnose disease
- Prevent disease
- Treat disease



Molecular Diagnostics



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



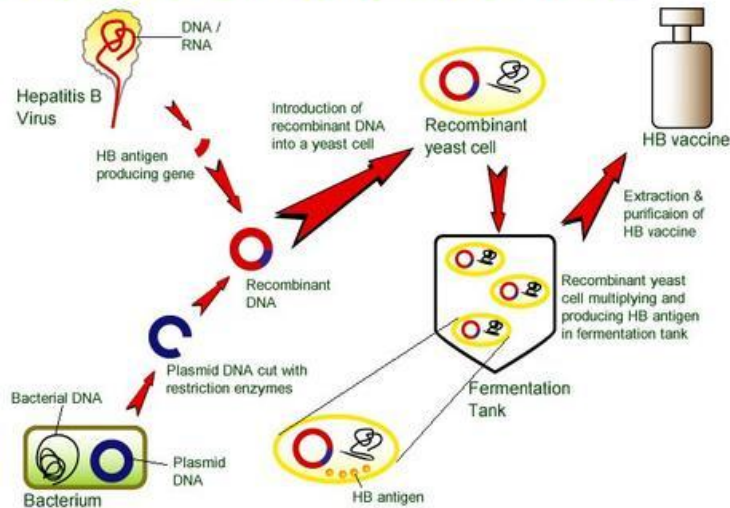
Eating banana triggers immune response to pathogen



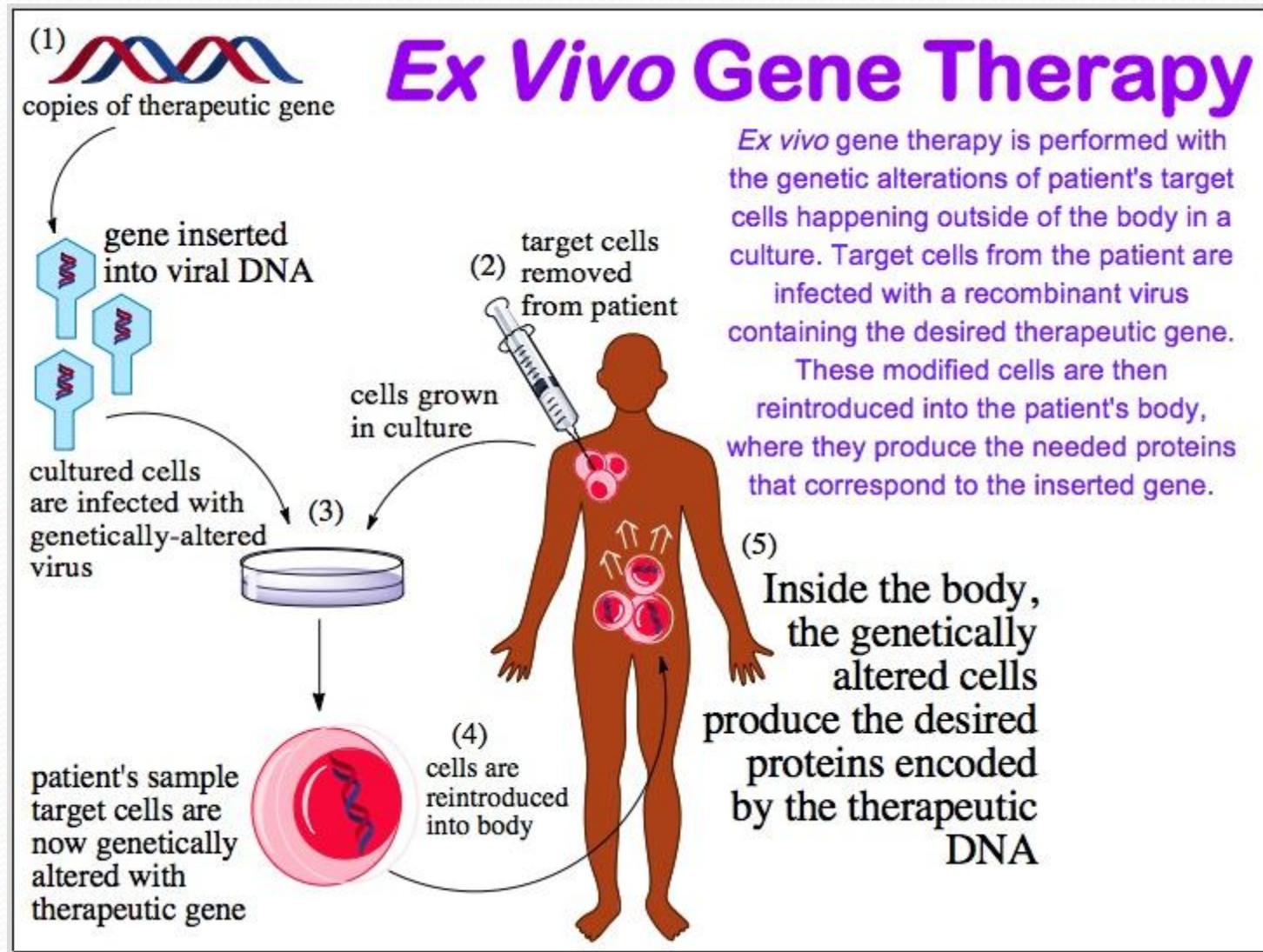
Leaf segments sprout into whole plants carrying gene from human pathogen



Production of Recombinant HB Vaccine



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.

