



WHAT IS BIOTECHNOLOGY? WHAT IS GENE TECHNOLOGY?

Biotechnology is a broad term that covers the practical use of biological systems to produce goods and services. It encompasses the transformation of materials by micro-organisms (eg. fermentation), methods of propagation, such as plant cloning or grafting, and may involve genetic alteration through methods such as selective breeding.

Recent advances in biotechnology provide ways of introducing very precise changes to genetic material that allow, for the first time, the transfer of properties of a single gene from one organism to another.

These new techniques, commonly referred to as "gene technology", involve the modification of organisms by the direct incorporation (or deletion) of one or more genes to introduce or alter a specific characteristic or characteristics.

Organisms created using gene technology techniques are commonly referred to as 'genetically modified organisms' (GMOs).

How is gene technology used?

Gene technology has a wide range of potential applications including:

- Research, eg. basic research in biology and medicine with micro-organisms and transgenic animals;
 - Agriculture, eg. genetic modification of crops to incorporate resistance to pests and diseases, herbicide tolerance, slow the ripening of fruit or alter the timing and duration of flower production;
 - Therapeutic goods, eg. modification of micro-organisms to produce therapeutic products such as insulin and vaccines;
 - In medicine for the diagnosis and treatment of disease;
 - Industrial uses, eg. production of enzymes for use in food processing and paper pulp production and biological leaching of minerals; and
 - Bio-remediation, eg. use of micro-organisms to decompose toxic substances and clean-up industrial sites or environmental accidents.
- **For further information contact us:**

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