

GENETIC ENGINEERING:

Genetically Modified organisms

Cloning

Stem cell research

DEFINE THE FOLLOWING TERMS:

Biotechnology:

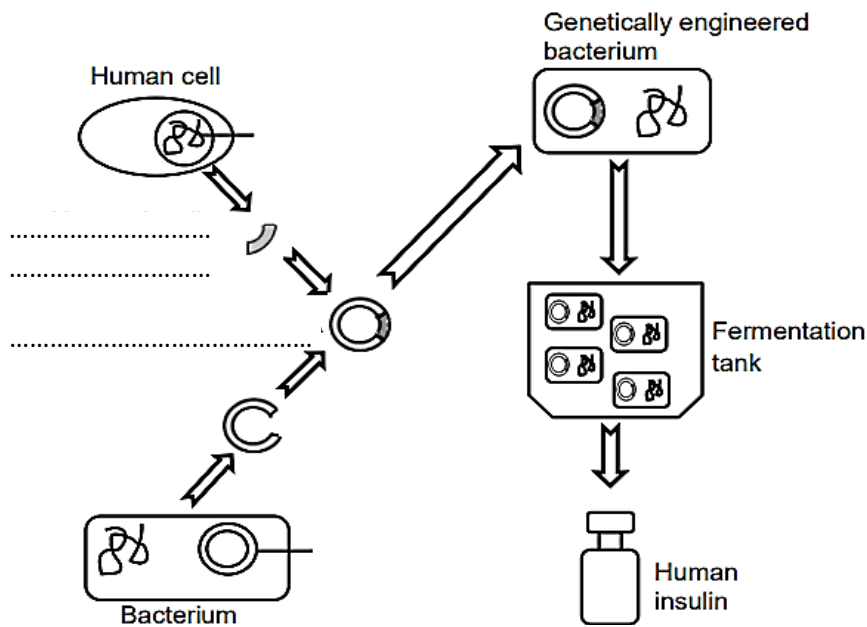
Cloning:

Stem cells:

Describe the steps involved in producing recombinant DNA.

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STEPS INVOLVED IN PRODUCING RECOMBINANT DNA



STEM CELL RESEARCH

Sources:

Uses of STEM CELLS:

Explain why some people prefer the use of umbilical cords as a source of stem cells rather than the use of human embryos.

OR

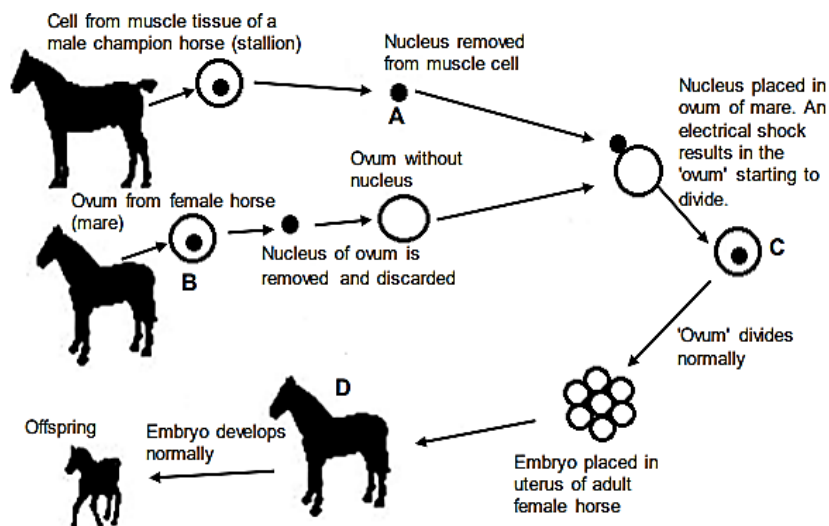
Advantages of GENETIC ENGINEERING

Disadvantages of GENETIC ENGINEERING

Explain why bacteria are most suitable for genetic engineering.

OR

STEPS INVOLVED IN A CERTAIN GENETIC ENGINEERING PROCESS



a. Name the:
Genetic engineering process shown in the diagram above

Process that produced ovum B

c. Explain why the nucleus of a muscle cell was used and not the nucleus of a sperm cell.

d. Explain why the nucleus of the ovum was removed.

e. State THREE benefits of cloning.

f. Explain why the 'ovum' labelled C cannot be considered a gamete.

g. Explain why some people might be against genetic engineering.