

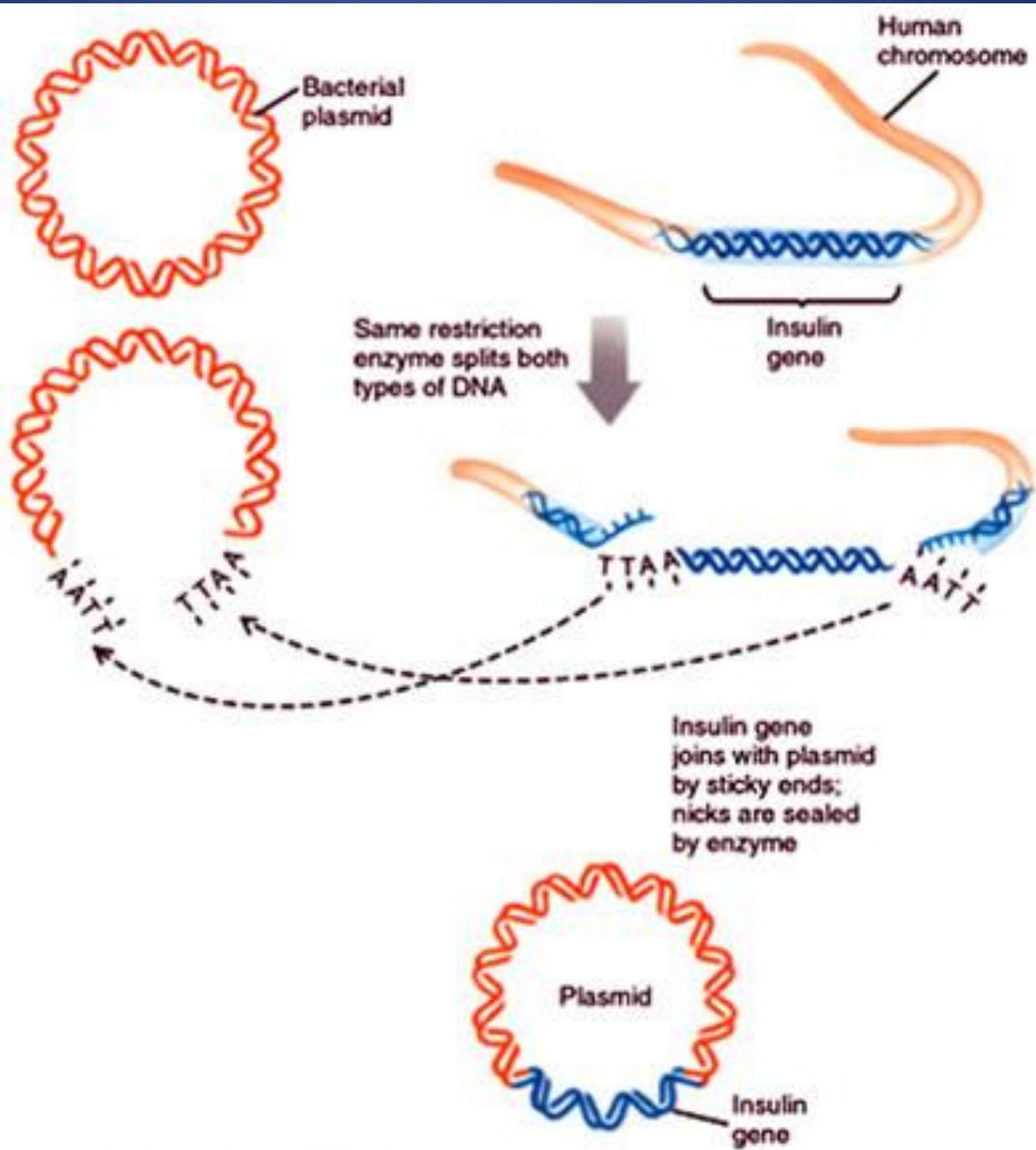
GMO

- Genetically modified organism (GMO) is a living organism whose DNA has been modified through genetic transformation to provide it with traits it would not otherwise have

Procedure of Transgenesis to create GMO's (don't copy)

Transgenesis is a procedure that consists in inserting into an organism a gene that is foreign to it.

1. A useful characteristic is identified in the donor organism
2. The gene is extracted from the donor
3. It is inserted in the organism of interest
4. Only a small number of organisms correctly integrate the gene and they are selected and used for whatever purpose. (Procedure worked)



Applications of GMO's

- **Agronomy:** plants resistant to stress (heat, drought, parasites), tolerant to herbicides.
- **Medicine:** use of animals for research purposes, drug production, making insulin for diabetes
- **Food:** slowing of a food's ripening process, increase in nutritional qualities, increase insect resistance
- **Industry:** large scale production of materials in the animal world(milk, chicken), production of biodegradable materials, production of biofuels.

Benefits

- Can produce desired results after only one generation
- Can transfer a useful gene from one species to another
- Could establish a gene bank
- Can improve harvests due to the development of GMOs that are resistant to herbicides and insecticides
- To produce more natural foods
- Can produce less allergenic foods

Concerns

- Risk that GMOs hazardous to humans and other species could be accidentally created since gene behaviour is not yet fully understood
- Risk of creating new allergies
- Risk that biodiversity will be compromised by only cultivating transgenic plants (no natural plants left)
- Risk that insecticide on plants could lead to the disappearance of useful insects
- Risk that the resistance of some GMOs to herbicides could be transferred to weeds
- Risk that GMO pollen could invade other crops and thus control over GMOs would be threatened

GMOs

Read pages 249-251

Fill in the table with the help of your
textbook (Pg. 251)

Benefits	Concerns