

- Transgenesis

↳ Transfer of gene in to host cell.

↓
Recombinant

↳ r-DNA Technology

GDI → Selection & processing of Vector → RE digestion
Insertion of GDI in to Vectors → Mobilization of
vector in to suitable host → Screening of
Transformed cells

Recombinant Insulin



Hormone:- Regulation of blood glucose level

It tries to reduce the blood glucose level

It will stimulate the glucose breakdown/
utilization

And the glucose synthesis

so that blood glucose level remain in normal
range.

- Insulin Secreted → β -cells of Langerhans → Pancreas.

- ↓

→ Deficient → Diabetes mellitus.

→ ↓ A-AGE

Unable to produce insulin are supplemented with/injected
with insulin externally.

→ 2 methods for producing insulin

↓
Conventional
methods

↓
Recombinant
method.

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Stoxin Cryprotein $\rightarrow$ cryI, cryII, cryIII, cryIV, cryV, cryVI $\leftarrow$ types

endotoxin Mode: Protein is been produced by Bt and the protein is found to be accumulated as an inactive precursor molecule. If the insect ingest these protein, the inactive precursor is protoxin, the insect ~~have~~ produce enzyme and break down protoxin into fragments, these small fragment will be present in insect intestine and binds to the internal wall of insect (gut epithelial tissue) $\rightarrow$ cause damage $\rightarrow$ unable to eat $\rightarrow$ dies.

Disadvantage: It is found to be bio-degradable $\rightarrow$ it has to be replenished / supply at regular intervals.

Soln: "Protein Engineering" will make the crypto synthesis of the endotoxin

the most successful $\rightarrow$ Bt cotton Cadding through r-DNA technology

Sendotoxin gene in Maize. (insect: European Corn borer)
 $\downarrow$
Problem: it lays it at egg $\leftarrow$ D. Strinia nubilalis
beneath the leaf,

— it does not come in contact with the insecticides.
That is why, 1993 $\rightarrow$ genetically engineered $\rightarrow$
Stoxin was added $\rightarrow$ cryIAb $\rightarrow$ 1155 AA (Total)

29 AA - 607 AA
Sequence