

GENOMIC LIBRARIES OR GENE BANK

DEFINITION → It is a complete collection of cloned DNA fragment which comprises the entire genome of an organism (Daht and co-workers 1951).

METHOD OF FORMATION OF GENOMIC LIBRARY

→ It is constructed by a shoot gun experiment. Where whole genome of a cell is cloned in the form of random and an identified clones.

The cloned DNA are produced by -

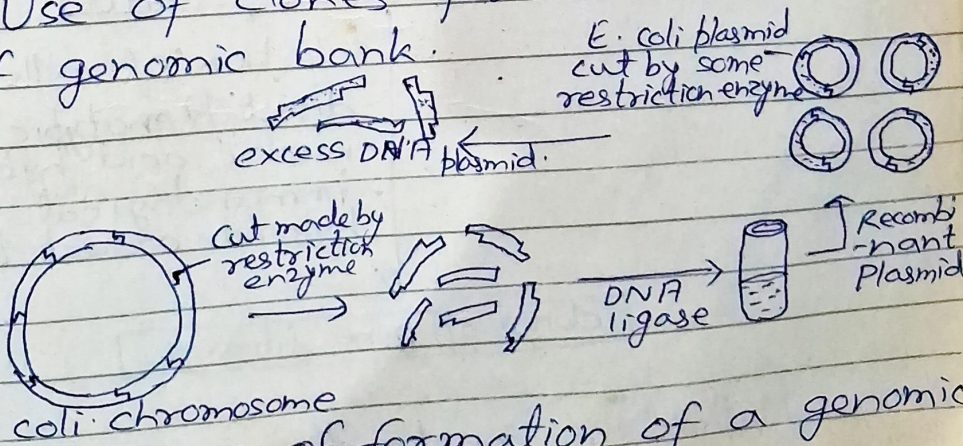
A) Isolation of DNA fragment to be cloned.

B) Joining the fragment to a suitable vector.

C) Introduction of recombinant DNA into host cells at high efficiency to get a large number of independent clones.

D) Selection of the desired clones.

E) Use of clones for the construction of genomic bank.



Technique of formation of a genomic library.

entire genome
from donor
cells

fragmentation by restriction enzyme
or mechanical shearing

random DNA fragments

vector DNA

ligation by

- Cohesive ends
- blunt ends
- Using linkers
- homopolymer tailing

circular recombinant DNA

introduction into host cells by
transformation, transfection,
in vitro packaging with phage
or cosmid DNA.

host's cell containing recombi-
nant DNA

selection of cells by

- direct phenotypic selection.
- nucleic acid hybridization.
- immunological tests.
- hybrid arrest translation.

clones of gene library.

Method of construction of Gene Library