

Important points

Polymerase chain reaction or PCR consists of the following three steps:

- Denaturation- The two DNA strands of template DNA separate from each other when heated to 94°C.
- Annealing- The primers anneal to the 3' end of single strands of DNA.
- Extension- The primers are extended by DNA polymerase by the addition of nucleotides to 5' form complete strands of DNA. Hence the sequence of steps is denaturation, annealing, extension.

1. Polymerase chain reaction is a technique that is used to make millions to billions of copies of the gene. So it is used for molecular diagnosis of diseases, gene amplification and detection of gene mutation.
2. p8R322 is a type of cloning vector that contains antibiotic resistance gene for Ampicillin and tetracycline. Recombined E.coli loses the ampicillin resistance when the gene for β -galactoside is inserted in the ampicillin resistance gene with the help of Pst I. The recombinant cell (host) produces a protein, beta-galactoside that is not a novel protein and it does not have dual ability. When the transformed cells lose ampicillin resistance property then they cannot resist ampicillin.