

Cycle 10; Class 21 Genetically Modified Organisms

1. composition of expression vectors.

- There are sites where you insert gene of choice
- Want to be able to control, so it has

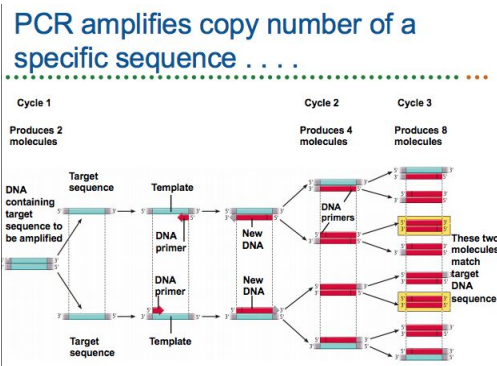
2. role of antibiotic resistance genes in vectors.

- Has ampicillin resistance, to function as a “selectable marker”
 - Selectively grow the hosts that take up the vector, those who do not have the vector is susceptible to die

3. role of reporter genes in vectors.

4. basic mechanism of polymerase chain reaction (PCR).

- PCR is polymerase chain reactions, the revolutionized modern biology
 - Take microscopic amount of DNA and amplifies it (making many copies), essentially DNA synthesis



5. primers needed for PCR, given a target gene sequence.

- Polymerase needs a primer, a 3' hydroxyl that polymerase can extend

6. characteristics of Taq polymerase that make suitable for PCR.

- Taq remains Functional at high temperatures, used in PCR then in high temps
 - The specificity remain in the PRIMER not the TAQ, very important
 - The second primer needed**** need to know how to do primers

7. usefulness of transgenic strategies in research as well as commercial protein production.

- Basic research - study their behavior, maybe get them to do other things
- Commercial products- create valuable products
- Medical treatments- treatments

8. branches of Canadian government responsible for regulating production and sale of genetically modified organisms.

- Only Health Canada, environment Canada regulate GMOs

9. definition of genetically modified organisms (GMO) in Canada.

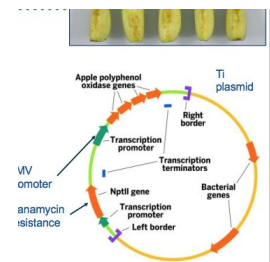
- A genetically modified food is derived from an organism that has some of its heritable trait changed; including cross breeding, radiation mutagenesis, recombinant DNA techniques
 - There are no distinguishing features so all things are GMOs

10. examples of GMO organisms approved to be consumed as food in Canada.

- Transgenic apple trees

11. basic process of producing transgenic "Arctic Apples" and "AquaBounty Salmon".

- Consumer based traits like “arctic apples”, are when the gene for the browning of the apple is silenced, which is approved for sale in Canada



- Taking the promoter to drive the apple gene, the RNAi is not there, it is actually

12. basic processes for human gene therapy.