

Cis499



**ASSIGN
BUSTER**

Gene Splicing Lab Question #1: DNA is made up of two separate strands of base sequences. The same sequence is found on both strands, but running in opposite directions. What word describes this characteristic? Palindrome

Question #2: What does the term " sticky ends" refer to in gene splicing?

When you splice a piece of DNA with a restriction enzyme, and want to insert the new gene, the " glue" that holds the two pieces together are the complementary bases, or sticky ends. Question #3: What is a plasmid? How is a plasmid used in gene splicing? A plasmid is a circular segment of DNA with an origin of replication.

It can be duplicated and serve as an adjunct to the main bacterial chromosome. Question #4: What types of vectors are used to carry DNA from one species into the DNA of another species? Give examples. Generally plasmids and viruses, although naked DNA is a possible source as well. Question #5: What is a " transgenic organism"? Give examples. Organisms that contain dna from another organism. it is a type of gmo, or genetically modified organism. Ex: genetically modified crops, transgenic cows that produce different milk, mice with different genes

Question #6: Why is it essential that the same restriction enzyme be used to cleave (cut) the DNA of both organisms used to create a transgenic organism? The restriction enzyme cuts in specific sites on the DNA, for example complementary strands. A and T or C and G. So only with the same enzyme at both the DNA of organisms in places where the complementary base pairing can be cut, is used as the same enzyme enzyme, the DNA will be cut for example. at A and T on both the organisms the opportunity to tie the organisms at these sites via H-bridges as complementary bases.

Therefore, it is allowed to bind the two organisms form a transgenic organism Question #7: Are there any factors other than technical ones that might slow — or even prevent — the use of bioengineering? There are many social factors that will impede the progress of bioengineering. In the case of agricultural bioengineering, some people are frightened that bioengineered food would be less healthy. Bioengineered crops will also decrease the biodiversity of our food, making it more susceptible to disease (ergo famine). Also, genetically engineered crops will give developed nations a huge advantage over third world in food production.