

SELF-TEST

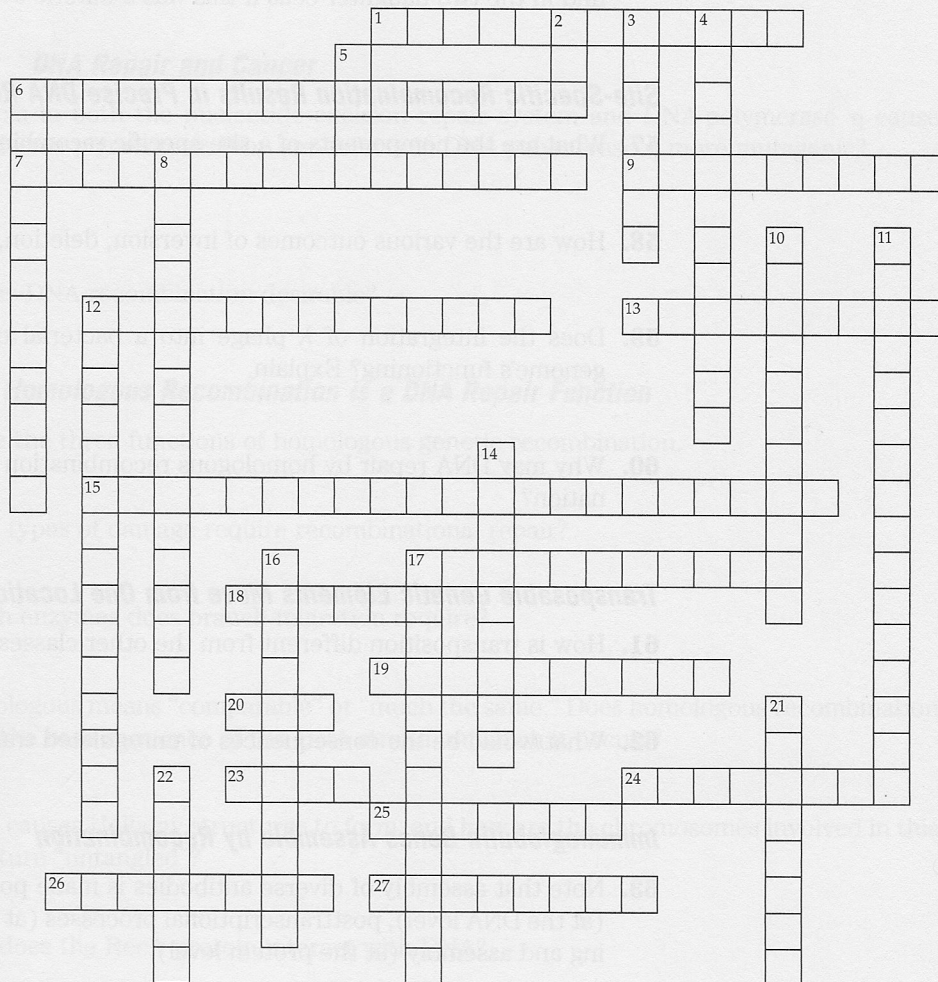
Do You Know the Terms?

ACROSS

1. Enzymes used in base-excision repair to create abasic sites.
6. DNA lesions repaired directly or by ABC excinuclease in nucleotide-excision repair. (2 words)
7. Small pieces of DNA synthesized in the direction opposite to the direction of movement of the replication fork. (2 words)
9. Type of mutation involving infiltration of an extra base pair into the DNA sequence.
12. It would take twice as long for an *E. coli* chromosome to be duplicated if replication were not _____.
13. Traveling protein machine that helps in lagging-strand synthesis.
15. Crossover structures in homologous genetic recombination. (2 words)
17. *E. coli* has (at least) three types: I, II and II; eukaryotes have three types: α , δ , ϵ ; all types catalyze $5' \rightarrow 3'$ synthesis of DNA.
18. Like glycogen synthesis, DNA polymerization requires this to begin.
19. Similar but not exactly alike; also describes a type of genetic recombination.
20. DNA-binding protein necessary in initiation and elongation steps of replication. (abbr.)
23. The replication _____ is a moving opening that leads the replication process.
24. Parental strand that provides guidance for synthesis of new DNA, using the Watson-Crick base-pairing rules.
25. Describes the DNA strand made in a discontinuous fashion.
26. The Ames test is a simple test for these.
27. Type of repair that discriminates between the parental strand and the newly synthesized strand by recognizing methylation of the template strand.

DOWN

2. In bacteria, when DNA damage is extensive, the _____ response kicks in and initiates error-prone repair.
3. Describes the DNA strand that is continuously synthesized.
4. _____ - _____ recombination is important in regulation of expression of certain genes; uses a recombinase.
5. Nucleoprotein filament that assembles cooperatively on single-stranded DNA.



6. Number of nucleotides added before dissociation of a polymerase from DNA; a measure of "hold."
8. Enzymes that act after formation of abasic sites.
10. Enzyme that catalyzes $3' \rightarrow 5'$ error correction or $5' \rightarrow 3'$ removal of RNA primers.
11. Describes DNA replication in which the newly synthesized DNA duplex has one newly made strand and one strand from the parental duplex.
12. Process occurring during homologous genetic recombination in which the extent of base-pairing between a template strand and each of two complementary strands is altered. (2 words)
14. All the necessary DNA replication enzymes and proteins, in one neat package; has not yet been isolated as such.
16. "Jumping genes."
17. Mechanism that helps to ensure the integrity of DNA; occurs during polymerization.
21. Enzyme that unwinds DNA.
22. Enzyme that catalyzes formation of a phosphodiester bond between a $3'$ -hydroxyl at the end of one DNA strand and a $5'$ -phosphate at the end of another.