

DNA Replication "S" Phase

BIOL 210 SI

1. What is the "semi-conservative model" of replication?
2. What is the origin of replication?
What is the difference in the # of origins in Euk vs. Prok. Cells. Why would it be important that Eukaryotic cells have more than one?
3. a) Draw a replication fork: Label structures and enzymes involved: see list below for help

b) Describe the function or structure of each as applicable:
Helicase
Single Stranded Binding proteins
Primase (function & why is it necessary?)
DNA polymerase (describe detailed function in DNA synthesis):

5' & 3' ends
Leading Strand
Lagging strand
Okazaki fragments
RNAseH
Ligase
4. Why is the lagging strand made discontinuously in fragments?
5. Why is it important that cancer cells produce the **telomerase** enzyme? Why do certain cells produce telomerase while others do not? Do you think neurons make telomerase?