

DNA replication

Question 1

DNA replication involves several different enzymes. What is the function of the:

- (a) DNA-Helicase
- (b) Primase
- (c) DNA polymerase

Question 2

E. coli genome is made of 4.6×10^6 base pairs. Knowing that the replication speed in E. coli is 1,000 bases per second, calculate how much time is necessary for the replication of the entire E. coli genome.

Question 3

Under optimal conditions (rich culture medium, optimal temperature, etc.) E. coli doubling time is 20 minutes. This doubling time is shorter than the time required for the genome replication.

Explain how is this possible.