

## Video Article

# Example Conceptual Narrative and Animation

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## Abstract

## Video Link

The video component of this article can be found at <http://www.jove.com/video/1999/>

## Protocol

### Completed Conceptual Narrative Statements

**(Intro)** The overall goal of the following experiment is to observe real time replication of individual DNA molecules mediated by proteins of the bacteriophage replication system.

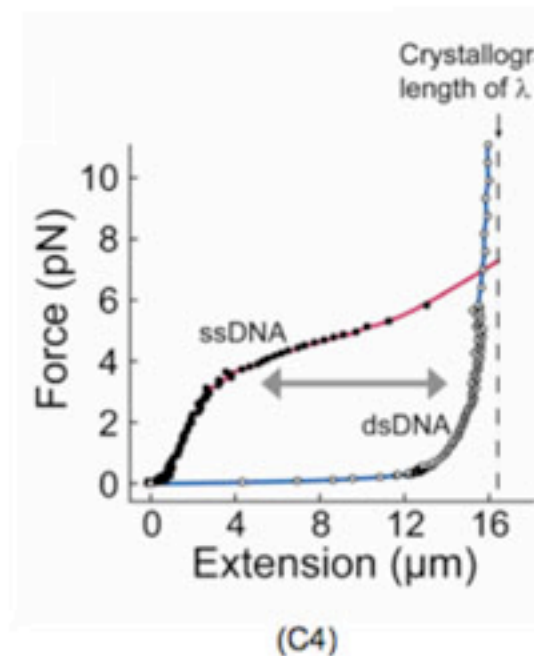
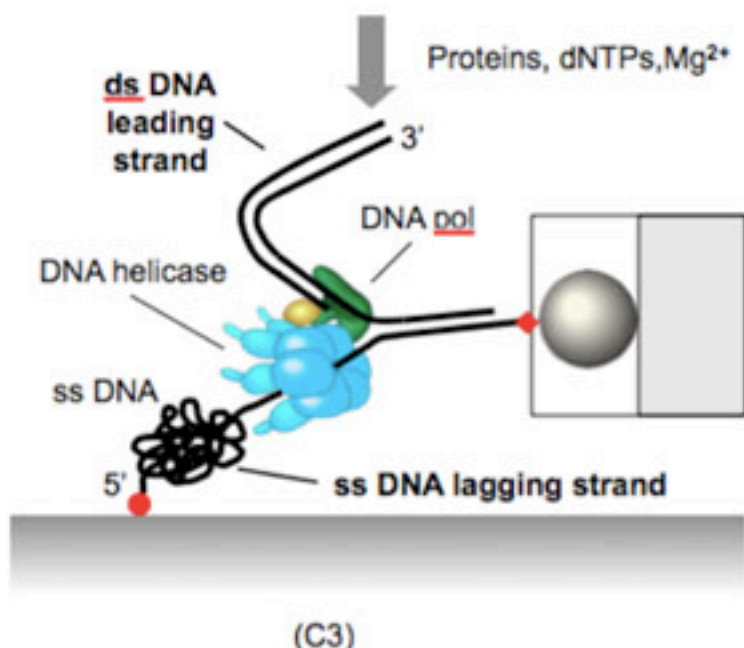
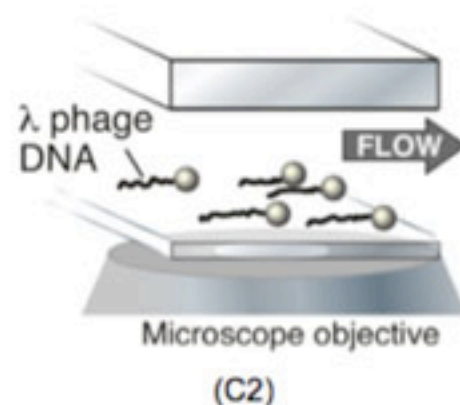
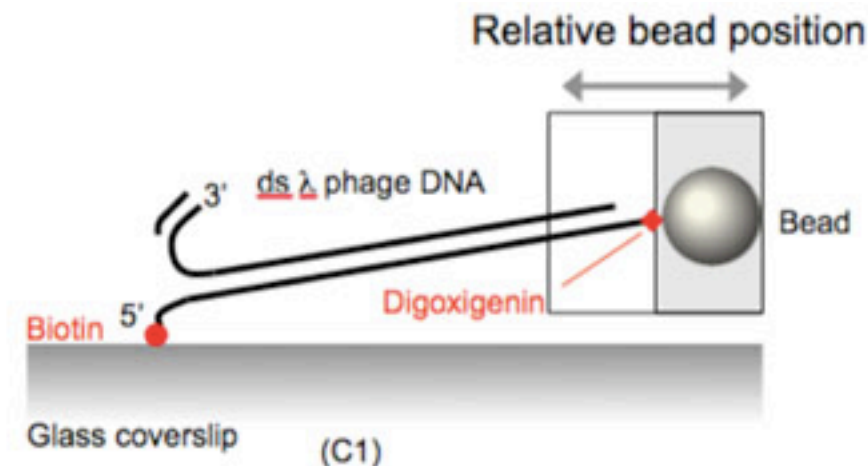
**(P1)** The is achieved by linearizing and chemically modifying  $\lambda$  DNA to allow for attachment to functionalized glass and visualization of the DNA.

**(P2)** As a second step, laminar flow is applied, which causes stretching of the DNA.

**(P3)** Following the addition of replication proteins the leading strand lengthens and the lagging strand shortens due to coiling.

**(P4)** Results are obtained which show the rate and processivity of DNA based on the large difference in the length of ds and ss DNA.

## Schematic Diagram



## Final Conceptual Narrative

(Intro) The overall goal of the following experiment is to observe real time replication of individual DNA molecules mediated by proteins of the bacteriophage replication system. (C1) Linearized and chemically modified λ DNA, is attached to a functionalized glass coverslip. The free end of the DNA is bead labeled (C2) and the DNA is stretched by laminar flow. (C3) When replication is initiated, the leading strand begins to lengthen and the lagging strand shortens due to coiling. (C4) The large difference in the length of double stranded and single stranded DNA allows for a precise determination of the rate and processivity of DNA replication.

## Disclosures

No conflicts of interest declared.