


Bio 115 Cells & Evolution of Life

## Cellular Growth and Division

### The Prokaryotic Cell Cycle



Start Audio Lecture!

1

---

---

---

---

---

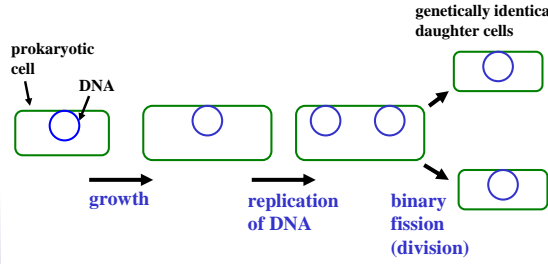
---

---

---

Bio 115 Cells & Evolution of Life

## The Prokaryotic Cell Cycle



prokaryotic cell

DNA

genetically identical daughter cells

growth

replication of DNA

binary fission (division)

2

---

---

---

---

---

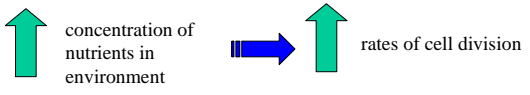
---

---

---

Bio 115 Cells & Evolution of Life

## Control of Prokaryotic Cell Cycle



concentration of nutrients in environment

rates of cell division

3

---

---

---

---

---

---

---

---

Bio 115 Cells & Evolution of Life

### Prokaryotic Cell Division: Replication of DNA

Origin(s) of replication (ori)

Cell wall  
Plasma membrane  
Chromosome

the two origins segregate as chromosome is copied and more plasma membrane is added between points of attachment

4

---

---

---

---

---

---

---

---

---

---

Bio 115 Cells & Evolution of Life

### Prokaryotic Cell Division: Cytokinesis

Cell wall  
Plasma membrane  
Chromosome

infolding of the plasma membrane is occurring...

resulting in the division of one cell into two cells → cytokinesis

5

---

---

---

---

---

---

---

---

---

---

Bio 115 Cells & Evolution of Life

### Binary Fission in Eukaryotic Organelles

mitochondrion

chloroplast

---

---

---

---

---

---

---

---

---

---