

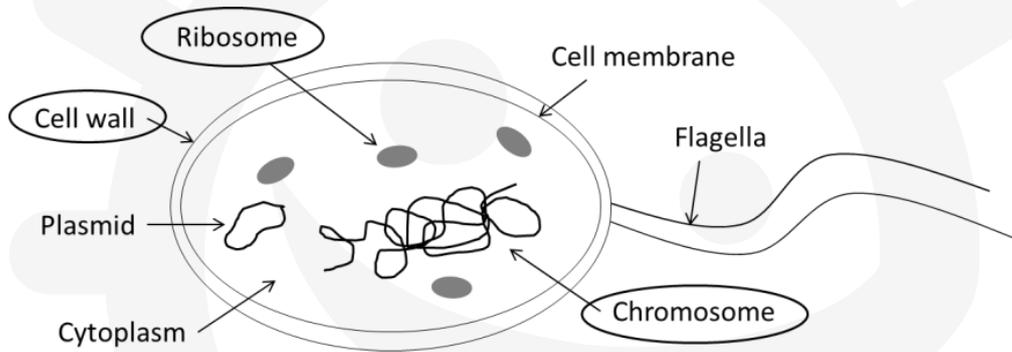


### Student Worksheet 1 Answers

1. Ciprofloxacin is an antibiotic which kills multiple species of bacteria by inhibiting DNA replication. Is it:

- a. Bactericidal or bacteriostatic? **Bacteriostatic**
- b. Broad or narrow spectrum? **Broad spectrum**

2. Draw an outline of a bacterial cell, including the cellular contents, and label all the areas. Circle areas where antibiotics are active.



3. How do viruses differ from bacteria?

Viruses do not have their own cell machinery for DNA replication, protein synthesis or metabolism. Viruses rely on a host cell for survival. Viruses also do not have a cell wall, unlike bacteria. The virus structure is composed of a capsid, glycoproteins and nucleic acid.

4. What is the difference between conjugation and transformation?

Conjugation: direct transfer of genetic material and DNA between two bacterial cells

Transformation: DNA is released from one bacterium and taken up by another, and there is no direct contact between the two bacteria.





5. How are resistant bacteria spread throughout the community? List as many methods of transmission as you can think of.

Direct skin to skin contact

Touching surfaces, including vegetables and raw meat

Breathing in microbes in the air

Sexual contact

Poor hygiene after visiting the toilet

Water in countries without good sanitation or contaminated with animal slurry

Eating food containing or contaminated with resistant bacteria

Contact with animals carrying resistant bacteria

6. The correct use of antibiotics can prevent the increase in antibiotic resistance. How should antibiotics be used correctly?

Take as prescribed by a doctor or nurse:

Do not take for mild infections. Self-care first before going to the GP.

Only take for bacterial infections and not viral infections

Do not share antibiotics or take them for a different infection

Finish the course of antibiotics

7. Create a slogan or poster title that can be used to promote correct antibiotic use to the public.

