# Cornell Guided Notes

Genetics of Disease (Medical Interventions) | 2027-02-23

| Name | Period | Date | Lesson |
|---|---|---|---|
| | | 2027-02-23 | |

**Lesson focus**

Antibiotic mechanisms

| Key words and questions | Prepared details and student notes |
|---|---|
| **Essential question**<br>**What is today's target?** | Explain how antibiotics kill or stop bacteria by targeting structures that human cells do not share. Big idea: How does the structural difference between bacterial and human cells make targeted antibiotic therapy possible?<br><br>**My notes, examples, and questions** |
| **Key words**<br>**What vocabulary unlocks the lesson?** | - antibiotic<br>- bacteriostatic<br>- bactericidal<br>- MIC<br>- zone of inhibition<br>- resistance<br>- plasmid<br><br>**My notes, examples, and questions** |

# Cornell Guided Notes

Genetics of Disease (Medical Interventions) | 2027-02-23

## Cornell Notes - Continued

| Key words and questions | Prepared details and student notes |
| --- | --- |
| **Must-know ideas**<br>**What should I understand by the end?** | - Bacteria have a peptidoglycan cell wall, 70S ribosomes, and a circular chromosome; although human mitochondria contain their own circular chromosomes and 70S ribosomes, human cells lack a cell wall and use 80S ribosomes in their cytoplasm.<br>- Beta-lactam antibiotics (such as penicillin) block cell-wall synthesis; aminoglycosides target the 70S ribosome; fluoroquinolones disrupt DNA replication.<br>- Viruses have no cell wall, no ribosomes of their own, and no independent metabolic machinery, so antibiotics have nothing to target.<br><br>**My notes, examples, and questions** |
| **Process notes**<br>**What happens during class?** | - 0-10 min: List three bacterial structures not found in human cells; mark which ones antibiotics could attack<br>- 10-25 min: Read about one antibiotic class (beta-lactams); summarize target and mechanism in two sentences<br>- 25-40 min: Explain in writing why that target harms bacteria but spares human cells<br>- 40-52 min: Read about a second antibiotic class; add it to a comparison table<br>- 52-65 min: Write the virus explanation: what structures do viruses lack that antibiotics need to work?<br>- 65-80 min: Write the connection sentence: how does knowing the mechanism explain why a drug treats some infections but not others?<br><br>**My notes, examples, and questions** |

# Cornell Guided Notes

Genetics of Disease (Medical Interventions) | 2027-02-23

## Cornell Notes - Continued

| Key words and questions | Prepared details and student notes |
| --- | --- |
| **Steps and evidence**<br>**What do I do and turn in?** | - List three bacterial parts an antibiotic might attack, such as the cell wall.<br>- Read how one antibiotic class works, then summarize its target in two sentences.<br>- Explain why that target harms bacteria but spares human cells.<br>- Note why antibiotics do not work on viruses.<br>- Match two antibiotic classes to the bacterial structure each targets.<br>- Write one sentence connecting mechanism to why some drugs treat some infections.<br><br>Evidence: Vocabulary task - Two-class antibiotic mechanism comparison table (target structure, mechanism, why it spares human cells) plus a sentence explaining why antibiotics do not work on viruses.<br><br>**My notes, examples, and questions** |
| **Checks for understanding**<br>**How do I know I got it?** | - You will be able to describe how antibiotics target bacterial structures.<br>- You will be able to explain why antibiotics spare human cells.<br>- You will be able to explain why antibiotics do not treat viruses.<br><br>**My notes, examples, and questions** |

# Cornell Guided Notes

Genetics of Disease (Medical Interventions) | 2027-02-23

## Cornell Notes - Continued

| Key words and questions | Prepared details and student notes |
| --- | --- |

**Lab or safety notes**
**What must I handle carefully?**

Supplies:
- Pre-poured agar plates (or simulation)
- Antibiotic disks
- Sterile forceps
- Ruler or calipers for zone measurement
- Inoculating loop
- Marker and tape for labeling

**My notes, examples, and questions**

## Summary

Today's lesson focused on Antibiotic mechanisms. The main target was: Explain how antibiotics kill or stop bacteria by targeting structures that human cells do not share. The evidence of learning is Vocabulary task: Two-class antibiotic mechanism comparison table (target structure, mechanism, why it spares human cells) plus a sentence explaining why antibiotics do not work on viruses.. In my own words, the most important idea from today is:

**My summary**

## My final question or connection