Cornell Guided Notes

Genetics of Disease (Medical Interventions) | 2027-02-09

Name	Period	Date	Lesson
		2027-02-09	

Lesson focus

Standard curve and lab prep

Key words and questions	Prepared details and student notes

Essential question
What is today's target?

Build a standard curve from known dilutions and prepare the materials and steps for the ELISA model. Big idea: How does a graph of known standards let you determine the concentration of a completely unknown sample?

My notes, examples, and questions

Key words
What vocabulary unlocks the lesson?

- antigen
- antibody
- ELISA
- serial dilution
- standard curve
- substrate
- absorbance

My notes, examples, and questions

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Cornell Notes - Continued

Key words and questions	Prepared details and student notes
Must-know ideas **What should I understand by the end?**	- A standard curve plots signal (y-axis) against known concentration (x-axis); the best-fit line lets you interpolate unknown concentrations. - Reading off a curve means finding the unknown's signal on the y-axis, tracing horizontally to the line, then reading down to the x-axis. - A well-labeled ELISA plate layout prevents errors that ruin an entire run. **My notes, examples, and questions**
Process notes **What happens during class?**	- 0-10 min: Create the concentration-vs-signal data table from Tuesday's dilution plan - 10-25 min: Plot the data points and draw the best-fit line; label both axes with units - 25-40 min: Practice reading the curve: trace from a given signal to a concentration; explain the process in writing - 40-55 min: Prepare the model ELISA station: label wells A through H (or per protocol); lay out dilution series - 55-68 min: Write out the procedure steps for tomorrow's model run in numbered order - 68-80 min: Predict where a strongly positive sample would fall; compare prediction with a partner **My notes, examples, and questions**

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Steps and evidence **What do I do and turn in?**	- Use your dilution series to make a table of concentration versus expected signal. - Plot the points and draw the best-fit line that forms your standard curve. - Explain how you would read an unknown sample's concentration off this curve. - Prepare your ELISA-model station: label wells and lay out the dilution series. - Write the procedure steps you will follow tomorrow in order. - Predict where a strongly positive sample would fall on your curve. Evidence: Pre-lab - Standard curve (graph with labeled axes and best-fit line) plus written procedure for Thursday's model ELISA and labeled well layout. **My notes, examples, and questions**
Checks for understanding **How do I know I got it?**	- You will be able to build and interpret a standard curve. - You will be able to read an unknown concentration from a curve. - You will be able to set up a labeled dilution series for ELISA. **My notes, examples, and questions**

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Key words and questions	Prepared details and student notes
Lab or safety notes **What must I handle carefully?**	Supplies: - Micropipettes and tips - Microcentrifuge tubes or microplate - Stock antigen solution - Buffer or diluent - Microplate or tube rack - Lab notebook for the dilution table **My notes, examples, and questions**

Summary

Today's lesson focused on Standard curve and lab prep. The main target was: Build a standard curve from known dilutions and prepare the materials and steps for the ELISA model. The evidence of learning is Pre-lab: Standard curve (graph with labeled axes and best-fit line) plus written procedure for Thursday's model ELISA and labeled well layout.. In my own words, the most important idea from today is:

My summary

My final question or connection