

Cornell Guided Notes

Genetics of Disease (Medical Interventions) | 2027-02-18

Name

Period

Date

Lesson

Lesson focus

Wet ELISA lab

Key words and questions

Prepared details and student notes

Essential question
What is today's target?

Run a real ELISA with positive and negative controls and record the color result for each well. Big idea: How does following a precise multi-step procedure with proper controls produce a result you can trust?

My notes, examples, and questions

Key words
What vocabulary unlocks the lesson?

- positive control
- negative control
- specificity
- sensitivity
- primary antibody
- secondary antibody

My notes, examples, and questions

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Cornell Notes - Continued

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Must-know ideas
What should I understand by the end?

- ELISA steps must be performed in exact order; adding reagents out of sequence destroys the binding chain and invalidates results.
- Incubation times are critical: too short and binding is incomplete; too long and background signal builds up.
- Checking controls immediately after the run tells you whether to trust any of the other results.

My notes, examples, and questions

Process notes
What happens during class?

- 0-8 min: Don goggles and gloves; confirm plate layout matches Tuesday's plan before opening any reagent
- 8-25 min: Add reagents to each well in the correct order per the numbered procedure; keep controls in their designated wells
- 25-45 min: Wait incubation period exactly as written; do not disturb the plate; record start time
- 45-58 min: Add detection reagent; observe and record color in every well as it develops
- 58-68 min: Photograph the plate next to the layout sheet; save image to portfolio folder
- 68-80 min: Note whether controls matched predictions; write one sentence validating (or flagging) the run

My notes, examples, and questions

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Cornell Notes - Continued

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Steps and evidence What do I do and turn in?

- Put on goggles and gloves and confirm your plate layout matches your plan.
- Add reagents to each well in the correct order, keeping controls separate.
- Wait the required incubation times exactly as written in the procedure.
- Add the detection reagent and record the color that develops in every well.
- Photograph the plate next to your layout sheet for your portfolio.
- Note whether your positive and negative controls matched your predictions.

Evidence: Data table - Wet ELISA data table: well ID, reagent added, color result; control validation note; plate photograph.

My notes, examples, and questions

Checks for understanding How do I know I got it?

- You will be able to run an ELISA following a procedure safely.
- You will be able to record well colors accurately.
- You will be able to check controls to validate a run.

My notes, examples, and questions

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Cornell Notes - Continued

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Lab or safety notes
What must I handle carefully?

Safety:

- Goggles and gloves are mandatory before any reagent is opened and must stay on until cleanup is complete.
- Treat all samples as potentially biohazardous: use disposable tips and do not pipette by mouth.
- Dispose of used tips, plate, and reagents in the designated biohazard waste container.
- Add stop solution in a fume hood or well-ventilated area if required by the reagent SDS.
- Spills on skin: rinse immediately with water for 15 minutes; report to teacher; reference the reagent SDS for Section 4.

Supplies:

- ELISA kit (microwell plate, antigen samples, primary antibody, secondary enzyme-linked antibody, substrate, stop solution)
- Micropipettes and tips (calibrated; one set per lab group)
- Timer (one per group)
- Nitrile gloves (at least one pair per student)
- Safety goggles (one per student)
- Plate layout diagram from Tuesday (printed or in notebook)
- Camera or phone for plate photograph

My notes, examples, and questions

Summary

Today's lesson focused on Wet ELISA lab. The main target was: Run a real ELISA with positive and negative controls and record the color result for each well. The evidence of learning is Data table: Wet ELISA data table: well ID, reagent added, color result; control validation note; plate photograph.. In my own words, the most important idea from today is:

My summary

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My final question or connection