Cornell Guided Notes

Genetics of Disease (Medical Interventions) | 2027-05-03

Name	Period	Date	Lesson
		2027-05-03	

Lesson focus

SDS-PAGE gel results

Key words and questions	Prepared details and student notes
Essential question **What is today's target?**	Read an SDS-PAGE gel to judge the size and purity of your isolated protein. Big idea: SDS-PAGE translates a protein mixture into a pattern of bands that reveals size and contamination level. **My notes, examples, and questions**
Key words **What vocabulary unlocks the lesson?**	- GFP - chromatography - elution - protein marker - purity - QC **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?**	- SDS denatures proteins and gives all of them a uniform negative charge proportional to size. - Smaller proteins migrate farther through the gel matrix in a given time. - A pure target fraction shows one dominant band at the expected molecular weight. **My notes, examples, and questions**
Process notes **What happens during class?**	- 0-10: Read gel-interpretation notes; define marker lane and band - 10-28: Annotate gel image: label marker lane, estimate target protein size - 28-45: Compare fraction lanes; count extra bands per lane - 45-58: Identify most-pure fraction; justify with band count - 58-70: Write QC statement: passed or failed purity goal with evidence - 70-80: Add annotated gel to tracker; preview Friday lab report **My notes, examples, and questions**

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Steps and evidence **What do I do and turn in?**	- Read the gel-interpretation notes in the PLTW course shell and define the protein marker lane. - Compare your fraction lanes to the marker to estimate your protein's size. - Decide which fraction is most pure based on how few extra bands it shows. - Write one QC statement on whether the purification met the purity goal. - Add your annotated gel reading to your Unit 4 PLTW tracker evidence. Evidence: Data table - Annotated SDS-PAGE gel image with labeled marker lane, estimated protein size, band counts by fraction, most-pure fraction identified, and a QC statement. **My notes, examples, and questions**
Checks for understanding **How do I know I got it?**	- You'll be able to estimate protein size against a marker lane. - You'll be able to judge purity and write a QC statement from a gel. **My notes, examples, and questions**

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Lab or safety notes
What must I handle carefully?

Safety:
- No new chemical hazards today; gel image analysis is a paper or digital exercise.
- If handling a physical stained gel, wear gloves as Coomassie stain is a skin irritant.
- Dispose of any staining waste according to lab guidelines.

Supplies:
- Printed or digital SDS-PAGE gel image from the lab run (or PLTW-provided sample gel)
- Ruler or digital annotation tool for band-position measurement
- Colored pencils or digital markup for lane annotation
- Molecular-weight marker reference chart

My notes, examples, and questions

Summary

Today's lesson focused on SDS-PAGE gel results. The main target was: Read an SDS-PAGE gel to judge the size and purity of your isolated protein. The evidence of learning is Data table: Annotated SDS-PAGE gel image with labeled marker lane, estimated protein size, band counts by fraction, most-pure fraction identified, and a QC statement.. In my own words, the most important idea from today is:

My summary

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My final question or connection