Cornell Guided Notes

Genetics of Disease (Medical Interventions) | 2027-04-29

Name	Period	Date	Lesson
		2027-04-29	

Lesson focus

GFP and chromatography

Key words and questions	Prepared details and student notes
Essential question **What is today's target?**	Explain how GFP and chromatography let you track and separate a target protein. Big idea: GFP is a visual reporter that makes an invisible protein visible; chromatography exploits binding affinity to isolate it. **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

Key words and questions	Prepared details and student notes
Must-know ideas **What should I understand by the end?**	- GFP fused to the target protein fluoresces green under UV light, revealing which fraction contains the protein. - Affinity chromatography uses a resin that binds the target specifically, letting other proteins wash through. - Elution uses a competing molecule or change in buffer conditions to release the bound target protein. **My notes, examples, and questions**
Process notes **What happens during class?**	- 0-10: Read chromatography notes; define chromatography and elution - 10-25: Explain GFP reporter mechanism; annotate UV signal - 25-45: Diagram protein binding to column resin and wash steps - 45-58: Add elution step to diagram; label target fraction - 58-70: Predict which numbered fraction glows; write prediction - 70-80: Submit labeled diagram to tracker; confirm lab readiness **My notes, examples, and questions**

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Steps and evidence **What do I do and turn in?**	- Read the chromatography notes in the PLTW course shell and define chromatography and elution. - Explain why GFP glowing under UV light marks where the target protein is. - Diagram a protein binding to a column and then eluting in a chosen fraction. - Predict which fraction should glow if purification worked. - Submit a labeled chromatography diagram as PLTW tracker evidence. Evidence: Notebook check - Labeled chromatography diagram showing protein binding, wash, elution, fraction collection, and GFP signal prediction. **My notes, examples, and questions**
Checks for understanding **How do I know I got it?**	- You'll be able to explain how GFP marks the target protein. - You'll be able to describe how chromatography separates and elutes proteins. **My notes, examples, and questions**

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Cornell Notes - Continued

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

Lab or safety notes
What must I handle carefully?

Supplies:
- Chromatography column and buffers
- GFP-containing protein sample
- Collection tubes for elution fractions
- SDS-PAGE gel and protein marker ladder
- UV light source for GFP detection
- Micropipette and tips
- Safety goggles and nitrile gloves

My notes, examples, and questions

Summary

Today's lesson focused on GFP and chromatography. The main target was: Explain how GFP and chromatography let you track and separate a target protein. The evidence of learning is Notebook check: Labeled chromatography diagram showing protein binding, wash, elution, fraction collection, and GFP signal prediction.. In my own words, the most important idea from today is:

My summary

My final question or connection