Cornell Guided Notes

Principles of Biomedical Technology (Principles of Biomedical Science) | 2026-09-10

Name	Period	Date	Lesson
		2026-09-10	

Lesson focus

Biomolecule and tox data

Key words and questions	Prepared details and student notes
Essential question **What is today's target?**	Run biomolecule indicator tests following an SOP and collect data on unknown samples. Big idea: Controlled indicator tests produce valid forensic evidence only when positive and negative controls confirm the reagents are working correctly. **My notes, examples, and questions**
Key words **What vocabulary unlocks the lesson?**	- biomolecule - macromolecule - toxicology - tissue - autopsy - cause of death - manner of death **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?**	- Every indicator test requires a positive control (known positive sample) and a negative control (distilled water or known negative) run alongside unknowns. - Cross-contamination between tubes produces false positives; use a clean dropper or pipette for every transfer. - A dilution series changes one variable (concentration) while holding all others constant, allowing a dose-response relationship to be observed. **My notes, examples, and questions**
Process notes **What happens during class?**	- 0:00: Review SOP as a class; assign unknowns; review PPE requirements for today's reagents - 0:10: Set up labeled tube rack: positive control, negative control, and unknowns A-D - 0:18: Run indicator tests in order (sugars, starch, protein, lipids); record color results immediately - 0:45: Set up and record toxicology dilution series; note concentration as independent variable - 1:00: Record one contamination risk and one limitation in lab notebook - 1:10: Clean up stations per SOP disposal instructions; preview Thursday analysis **My notes, examples, and questions**

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Steps and evidence **What do I do and turn in?**	- Read the indicator-test SOP and set up labeled tubes with controls. - Test each unknown for sugars, starch, protein, and lipids per the SOP. - Record color-change results in a data table with positive and negative controls. - Note the concentration variable in the toxicology dilution series. - Record one limitation and one contamination risk in your method. Evidence: Data table - Indicator-test data table: columns for sample ID, each of the four indicators, color result, and interpretation (positive/negative); plus dilution series data table with concentration and observed effect. **My notes, examples, and questions**
Checks for understanding **How do I know I got it?**	- I can run indicator tests with proper controls. - I can record results in a controlled data table. **My notes, examples, and questions**

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Lab or safety notes
What must I handle carefully?

Safety:
- Lugol's iodine is a stain: wear nitrile gloves and a lab apron; it will permanently stain skin and clothing.
- Benedict's solution requires heating: use a hot-water bath, not an open flame; use tongs when handling hot tubes; never point a heated tube at anyone.
- Biuret reagent contains sodium hydroxide, which is corrosive: avoid skin and eye contact; if contact occurs, flush immediately with water for 15 minutes and notify the teacher.
- Sudan IV is a potential carcinogen: minimize skin contact, work in a well-ventilated area, and dispose of Sudan IV waste in the labeled hazardous-waste container, not the sink.
- All liquid reagent waste goes into the designated waste beaker for disposal per the teacher's SDS instructions; never pour indicators down the sink without authorization.

Supplies:
- Test tubes or 96-well plates (one set per group)
- Test-tube rack
- Dropper bottles of indicator reagents: Benedict's solution, Lugol's iodine, Biuret reagent, Sudan IV or Brown paper (lipid test)
- Unknown food samples prepared as solutions (labeled A, B, C, D)
- Positive control solutions: glucose solution, starch solution, albumin solution, vegetable oil emulsion
- Distilled water for negative controls
- Disposable plastic droppers or micropipettes (one per reagent)

My notes, examples, and questions

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Summary

Today's lesson focused on Biomolecule and tox data. The main target was: Run biomolecule indicator tests following an SOP and collect data on unknown samples. The evidence of learning is Data table: Indicator-test data table: columns for sample ID, each of the four indicators, color result, and interpretation (positive/negative); plus dilution series data table with concentration and observed effect.. In my own words, the most important idea from today is:

My summary

My final question or connection