Biochemist interview questions

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What to expect

Interviews for biochemist roles typically assess both technical depth and how you work in a laboratory setting. Expect questions that probe your experimental design, problem-solving and compliance with safety and quality standards.

- **Technical:** Questions that test your hands-on knowledge of biochemical techniques, such as protein purification, chromatography or mass spectrometry.
- **Behavioural:** Questions asking for examples from your past experience, using the STAR method to describe how you handled a situation.
- **Scenario:** Hypothetical situations that assess your judgement, especially around safety, ethics or unexpected results.
- **Safety and compliance:** Questions about your understanding of WHS, OGTR regulations and quality standards in Australian laboratories.
- **Research fit:** Questions about your research interests and how they align with the employer's projects or values.

The process often starts with a phone screen with HR or a recruiter, followed by a technical interview with the hiring manager or senior scientist. You may be asked to give a short presentation on your previous research or complete a practical lab task. Final rounds usually involve a panel including the lab head and possibly a representative from quality or safety.

1. Walk me through how you would purify a recombinant protein from bacterial lysate.

Why they ask

This technical question assesses your hands-on skills in protein purification and your ability to plan a multi-step process.

How to structure your answer

Give a step-by-step walk-through: cell lysis, clarification, chromatography steps (affinity, ion exchange, size exclusion), and quality checks like SDS-PAGE and Western blot. Mention how you would monitor yield and purity at each stage.

Example answer

“First, I would lyse the bacterial cells using sonication or a French press, then clarify the lysate by centrifugation. For a His-tagged protein, I would use immobilised metal affinity chromatography, washing with imidazole to remove non-specific binders and eluting with a higher concentration. I would check purity by SDS-PAGE and then dialyse to remove imidazole. If needed, I would follow with size exclusion chromatography to separate aggregates. Throughout, I would keep samples on ice and use protease inhibitors to prevent degradation.”

2. Tell me about a time when an experiment failed unexpectedly. How did you handle it?

Why they ask

This behavioural question probes your problem-solving skills and resilience in a research setting.

How to structure your answer

Use STAR: describe the situation, the task you were working on, the action you took to diagnose and fix the problem, and the result. Focus on what you learned and how you communicated with your team.

Example answer

“Situation: I was running an enzyme assay and the activity was much lower than expected. Task: I needed to figure out why and get the experiment back on track. Action: I checked the reagent stocks and found that the substrate had degraded because it had been freeze-thawed too many times. I prepared fresh substrate and also optimised the buffer conditions. Result: The assay worked, and I implemented a new labelling system to track freeze-thaw cycles for all reagents. I also shared this with the team so we could avoid the issue in future.”

3. You notice a colleague not following a safety procedure in the lab. What do you do?

Why they ask

This scenario question assesses your commitment to safety and your ability to handle a sensitive situation professionally.

How to structure your answer

Show that you prioritise safety, approach the colleague respectfully, and follow correct reporting procedures if needed. Use a calm, non-confrontational tone.

Example answer

“I would first speak to my colleague privately and politely, reminding them of the procedure and asking if there was a reason they were skipping it. If it was a simple oversight, I would help them correct it. If they continued to ignore safety rules, I would report it to the lab manager or safety officer, because safety is everyone's responsibility. I would document the incident as required by our WHS policy.”

4. How do you ensure the accuracy and reproducibility of your data analysis?

Why they ask

This technical question checks your rigour and familiarity with data analysis tools and statistical methods.

How to structure your answer

Describe your process: data cleaning, using appropriate statistical tests, documenting your code or analysis steps, and performing repeat measurements. Mention tools like R or GraphPad Prism.

Example answer

“I start by checking the raw data for outliers or errors, then I use R or GraphPad Prism to run the appropriate statistical tests, such as t-tests or ANOVA. I document every step in a script or lab notebook so that others can reproduce it. I also run technical replicates and, where possible, biological replicates. Before finalising, I review the results with a colleague to catch any mistakes.”

5. Describe a time you had to explain complex biochemical concepts to a non-specialist audience.

Why they ask

This behavioural question assesses your written and verbal communication skills, which are important for reporting to stakeholders.

How to structure your answer

Use STAR: situation, task, action, result. Highlight how you adapted your language and used analogies or visuals.

Example answer

“Situation: I had to present my research on enzyme inhibition to a group of clinicians who were not biochemists. Task: I needed them to understand the potential impact on drug development. Action: I used an analogy of a lock and key to explain enzyme-substrate binding, and I avoided jargon. I also prepared simple diagrams. Result: The clinicians asked thoughtful questions and later incorporated my findings into a grant proposal.”

6. What interests you about our research in [area]?

Why they ask

This research fit question assesses your motivation and whether you have researched the employer.

How to structure your answer

Show that you have read about their work, connect it to your own skills and interests, and explain how you could contribute. Keep it specific and genuine.

Example answer

“I am particularly interested in your work on [specific project or area], because it aligns with my experience in protein purification and structural analysis. I have read your recent paper on [topic] and was impressed by how you used mass spectrometry to identify novel biomarkers. I would love to bring my skills in data analysis and chromatography to help advance that research.”