Biotechnologist interview questions

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What to expect

Biotechnology interviews test whether your bench technique is genuinely reliable and whether you can explain your reasoning when something goes wrong. Employers are also checking that you understand the quality and regulatory framework you would be working inside, since much of the work feeds into regulated products or accredited testing.

- **Technical and bench technique:** Questions about specific methods such as cell culture, PCR, chromatography or protein analysis, probing whether you have actually performed them rather than read about them.
- **Process walk-throughs:** Requests to describe an experiment or workflow end to end, usually to see where you build in controls, checks and documentation.
- **Troubleshooting and scenario:** Situations such as contaminated cultures, failed runs or unexpected results, where the interviewer watches how you reason under pressure.
- **Quality, regulatory and safety:** Questions on GMP, OGTR dealings, PC2 containment, WHS and accreditation standards such as ISO 15189 or ISO 17025.
- **Behavioural and teamwork:** Past examples of working in a shared lab, handling competing priorities or resolving a disagreement over data.
- **Data and analytical reasoning:** How you judge whether a difference between groups is meaningful, which tools you use and how you report uncertainty.

Most processes open with a short phone or video screen with a recruiter or HR, covering your background and availability. That is usually followed by a technical panel with the hiring scientist and often a quality or laboratory manager, which may include a lab tour. Some employers ask for a brief presentation on past work or a practical assessment at the bench. A final conversation with the team lead or HR usually covers working arrangements, shift expectations and how the team operates day to day.

1. Can you walk me through how you would take a set of samples from DNA extraction through to a finished qPCR result?

Why they ask

This is the core technical question for a molecular role. The interviewer wants to see that you know the sequence, the control points and the documentation, not just the headline method.

How to structure your answer

Use a sequential walk-through. Move through each stage in order, naming the decisions you make at each one, the controls you include, and what you would do if a control failed. Finish with how the result gets recorded and reported.

Example answer

“I would start by reading the sample manifest and clarifying what the downstream question is, because that shapes how much starting material I need and whether a column based extraction or a magnetic bead method suits better. Then I would work through lysis, binding, washing and elution, keeping a no-template control and a positive control alongside the samples. Before setting up the reaction I would quantify what I have and check the purity ratios, and I would verify the primers in SnapGene so I know the amplicon is specific. Plate setup is where I slow down: one master mix, consistent volumes, replicates kept in the same block position where possible. When the run finishes I look at the amplification curves before the numbers, because a late or flat control tells you more than any single cycle threshold value. If something looks wrong I repeat the affected samples rather than

adjusting the analysis to fit, and I log the deviation in the LIMS so the audit trail stays intact."

2. Tell me about a time an experiment gave you results you could not explain. What did you do?

Why they ask

Unexpected results are normal in this work. The interviewer is assessing whether you investigate systematically or quietly discard data that does not fit.

How to structure your answer

Use STAR. Set out the experiment and what you expected, describe the anomaly, then work through your investigation step by step and finish with what changed in your practice as a result.

Example answer

"Situation: we were validating an ELISA for a client project and one plate gave consistently higher background than the others in the same run. Task: I needed to know whether the assay itself was unreliable or whether something had gone wrong with that plate. Action: I went back to the plate map and found the affected wells shared a reagent trough, so I ran a fresh plate with a new aliquot of detection antibody and included the original lot alongside it. The background dropped with the fresh aliquot, which pointed to the reagent rather than the assay design, and a quick check with the supplier confirmed the lot had been stored incorrectly before it reached us. Result: we re-ran the affected samples, reported the validation without further delay, and I introduced a receiving check on reagent storage conditions so the same thing would be caught at the door."

3. You arrive in the morning to find your cell cultures contaminated, and a key timepoint is due today. What do you do?

Why they ask

This is a judgement under pressure scenario. Interviewers want to see that you protect the wider lab and the integrity of the data before you try to rescue a single experiment.

How to structure your answer

Work through it in phases: contain the problem, protect people and other work, communicate, decide on the immediate response, then follow up with a root cause review. Be explicit about what you would not do.

Example answer

"First I would stop and contain: quarantine the flasks, check whether any other vessels shared media or a hood session, and flag it to the lab manager so nobody uses the shared incubator until it has been cleaned. I would record the observation and take images before anything is discarded, because that evidence matters for the investigation. Then I would tell my supervisor and the project lead straight away rather than waiting to see if it resolves, since the downstream timepoint affects other people's scheduling. I would not try to treat the culture and carry on, because a contaminated line undermines everything measured from it. If the experiment cannot be salvaged I would say so and propose a restart plan with revised dates. Afterwards I would review the likely source, whether it was aseptic technique, a media batch or a filter, and adjust our handling procedure so the risk is lower next time."

4. How do you keep your day to day work compliant with PC2 containment and OGTR requirements?

Why they ask

Regulatory awareness is not optional in this field. The question is testing whether compliance is built into how you work or something you only think about during audits.

How to structure your answer

Answer practically. Describe the systems and habits you use rather than listing regulations, then give one concrete example of how you applied them.

Example answer

“It comes down to habits rather than memory. I check the dealing or approval conditions before I start anything new, so I know what containment level applies and whether there is a specific condition attached to that organism or construct. At the bench that means PPE and workflow discipline, no open bench work outside the cabinet, waste segregated into the correct stream, and surface decontamination as I go rather than at the end. I record what I handled, when and where, because the traceability is what standing audits are built on. In my last role I noticed our waste logs and our storage inventories disagreed on the quantity of one strain, so I reconciled them and set up a monthly check. Nothing dramatic came of it, but it meant the records matched reality if anyone asked, and the next internal review picked up no findings on that area.”

5. How do you decide whether a small difference between two treatment groups is actually meaningful?

Why they ask

Biotechnology generates a lot of data and interviewers want to know you can separate a real effect from noise without overclaiming.

How to structure your answer

Explain your reasoning framework: replication, variability, effect size, statistical tests and biological context. Then note how you communicate the uncertainty to whoever receives the result.

Example answer

“I start with the design, because if replication is too low or the groups were handled differently, no amount of analysis will rescue it. Assuming the design is sound, I look at the spread within each group before I look at the means, since a small difference with tight variability can matter more than a large one with wide spread. I choose the test to match the data rather than habit, checking whether the assumptions hold, and I report confidence intervals alongside p values so the reader can see the range of plausible effects. GraphPad Prism handles most of this for me and RStudio when I need something more custom. Then I put the number back into context: a change that is statistically clear still might not be biologically relevant, and I would say that plainly in the report rather than letting the table imply more than the data supports.”

6. Describe a time you had to explain technical results to someone outside the laboratory.

Why they ask

Biotechnologists regularly report to project managers, clinicians, clients or commercial teams. The interviewer is checking that you can translate your work without overstating it.

How to structure your answer

Use STAR, but make the outcome about the other person's decision rather than about your analysis. Show how you adjusted your language and what that achieved.

Example answer

“Situation: our quality team needed to decide whether a batch of reagent was usable, and the underlying evidence was a set of chromatograms showing a small shift in one peak. Task: I had to give them enough to make the call without burying them in the raw data. Action: I put the relevant traces side by side with the specification limits marked on them, explained in plain terms what the shift meant for the assay and what it did not mean, and stated clearly what I would recommend and why. I also offered the option of running a small confirmation batch if they wanted more certainty before releasing it. Result: they released the reagent with a documented rationale, and the quality manager told me afterwards that it was the first time a chromatography report had made sense to her. I have used that side by side format for non-specialist audiences ever since.”