

# Mock Interview Preparation: AHRI – Research Laboratory Technician

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This document provides personalized interview preparation based on your experience in HIV laboratory research, molecular biology, and data management. Use this guide to rehearse structured, confident responses for the AHRI Research Laboratory Technician role.

## **1. Can you walk us through your experience with molecular biology techniques such as PCR, nucleic acid extraction, and sequencing?**

In my role as a Laboratory Technologist at the University of KwaZulu-Natal, I regularly conducted nucleic acid extraction from whole blood and PBMCs using both manual and automated systems. I have experience with PCR in various forms – conventional PCR for gene amplification, and RT-PCR for quantifying viral RNA, particularly in HIV projects. During my time with MRC/Wits Health Consortium, I assisted with early-stage sequencing workflows and had exposure to library prep and downstream data QC. While I wasn't the primary sequencer, I gained a strong understanding of the process, including contamination control, quantification, and handling of sequence data.

## **2. How do you ensure accuracy and reliability in your results?**

My approach includes strict adherence to SOPs, performing regular calibration of equipment, and maintaining detailed lab records. I always include positive and negative controls in assays and double-check calculations and reagent preparations. I also perform replicates where necessary and ensure that peer review or second-person verification is conducted for critical results. At UKZN, we also maintained internal QC logs and reported discrepancies immediately to maintain data integrity.

## **3. Have you worked with sequencing data or bioinformatic tools?**

Yes, in supporting roles. At MRC/Wits, I assisted in preparing raw sequencing data files for analysis and had exposure to tools like Geneious for alignment and variant review. More recently, I've used FastQC and Galaxy workflows to assess read quality and align sequences. While I'm not yet an advanced bioinformatician, I'm confident using command-line tools for basic tasks and always eager to expand my bioinformatics skills.

## **4. Describe a time you supported a senior researcher or collaborated on a complex project.**

During a multi-site HIV immunology project, I assisted a senior investigator by preparing samples for ELISpot and DNA extraction. The project involved coordination across clinical and lab teams, and I was responsible for tracking over 300 participant samples. I ensured consistent QC across batches, compiled daily status reports, and flagged any deviations from the expected data. My role helped maintain sample integrity and data flow between lab and data management systems.

### **5. What steps do you take to ensure lab safety and equipment maintenance?**

Safety and maintenance are routine priorities. I perform daily equipment checks—particularly for biosafety cabinets and centrifuges. I ensure temperature logs are maintained for fridges/freezers, and I report any malfunctions immediately. I also participated in GCLP refresher training and was responsible for maintaining PPE stock and chemical inventory. At Wits, I assisted in preparing for internal audits by ensuring all documentation and safety signage were up to date.

### **6. How do you manage your data and keep records accurate and organized?**

I use both digital systems like LIMS and Excel trackers, as well as physical lab notebooks for bench work. I record every experiment with time stamps, lot numbers, and sample IDs. I also review data entry for completeness before submission. For reports, I compile summaries weekly and ensure that backup copies are stored securely. At UKZN, I also used Python to help clean and extract datasets for reporting to study managers.

### **7. Tell us how you engage with academic activities like journal clubs or lab meetings.**

At UKZN, I actively participated in weekly journal clubs where we discussed new findings in HIV pathogenesis and molecular methods. I've presented papers and occasionally shared updates from our lab projects. These sessions helped improve my critical thinking and scientific communication. I also regularly attended lab meetings where we discussed project timelines, QC challenges, and collaborative updates with the data and clinical teams.

### **8. What would you do if a sequencing run failed unexpectedly?**

First, I would check the run logs and reagent quality, review the control results, and verify the input sample quality. If the issue is not immediately clear, I'd consult the senior technician or sequencing lead to troubleshoot. I'd also document the failure and investigate recent deviations or procedural changes. Preventively, I'd review SOPs, suggest retraining if needed, and reinforce critical control steps for future runs.