

**INTEGRATED BIOBANKING WORKFLOWS WORKING GROUP:  
Workflow Case Studies and Lessons Learned Series**

**Workflow Case Study 4 – Barcode scanning failure on automated nucleic acid extractor**

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**Introduction**

This case study is reviewing the difficulties with scanning biospecimen sample 2D barcodes in an automated nucleic acid extractor workflow. Scanning failures may occur due to issues with sample ID format, thereby bringing to a halt the associated liquid handler automated DNA extraction run.





## Problems

- Barcode is encoded with a sample ID which is incompatible with the device's software as the sample ID is alphanumeric and contains too many characters.
- There is a difference between the maximum number of alphanumeric characters in the LIMS versus the liquid handler software.

Because the data cannot be processed (buffer overload), the extraction run stops. The samples must then be extracted via the extractor standalone protocol.

## Workflow Background

### SOPs

- Automated DNA Extraction from Non-fixed Materials
- Use and Maintenance: Nucleic Acid Extractor with Automated Liquid Handling Workstation

### Equipment

- Nucleic acid extractor with automated liquid handling workstation

### Consumables

- Adhesive labels

- DNA blood extraction kit for 24-rod head
- Falcon tubes, 4mL



### **Findings/Observations**

The issues with the scanning failures may be time-consuming, particularly when switching from the automated extraction protocol to the standalone extraction protocol. More significantly, if an automated DNA extraction run stops, the integrity of the samples may be compromised as they will be sitting at room temperature.

### **Solution**

Change the script and software settings so that a sample ID of up to 70 alphanumeric characters may be accepted.

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### **Call for participation!**

The Integrated Biobanking Workflows Working Group is recruiting members to develop more case studies based on this same template and where the objective is to uncover points in workflow integration which require improvement. Case studies may come from either

automated or manual processes, from processes at any throughput level, and from a biorepository of any type and size.

If you are interested or have any questions, please email:

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