Room Temperature Storage of Nucleic Acids

ABRF 2025
Robert Wappel



Cold Spring Harbor Laboratory

Quality Material = Quality Data



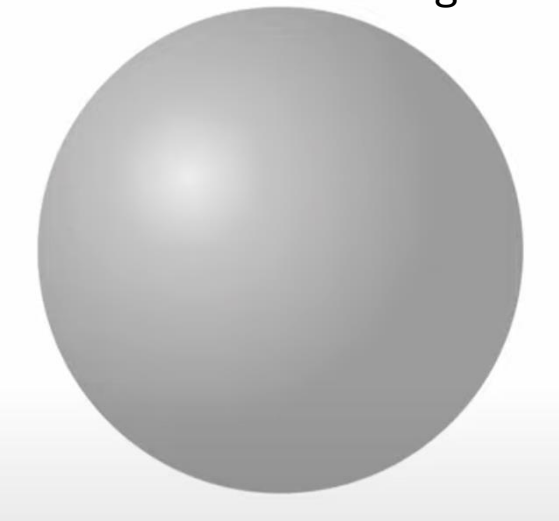




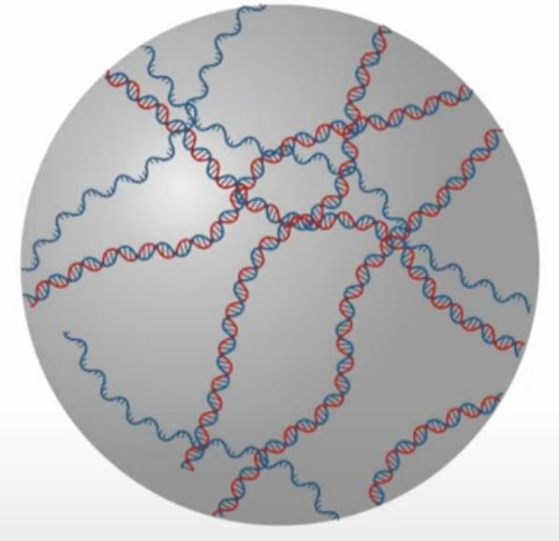


How Cache Works

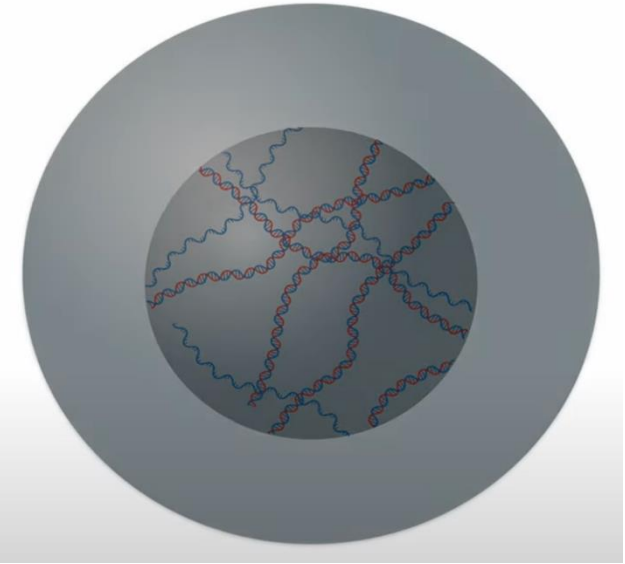
1. Cache beads have a slight charge



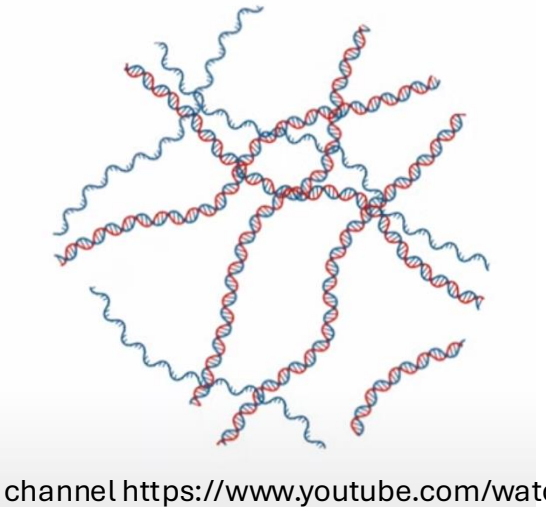
2. Nucleic acids are attracted to the beads



3. Encapsulants build a protective shell



4. Etch away shell and bead to retrieve nucleic acids

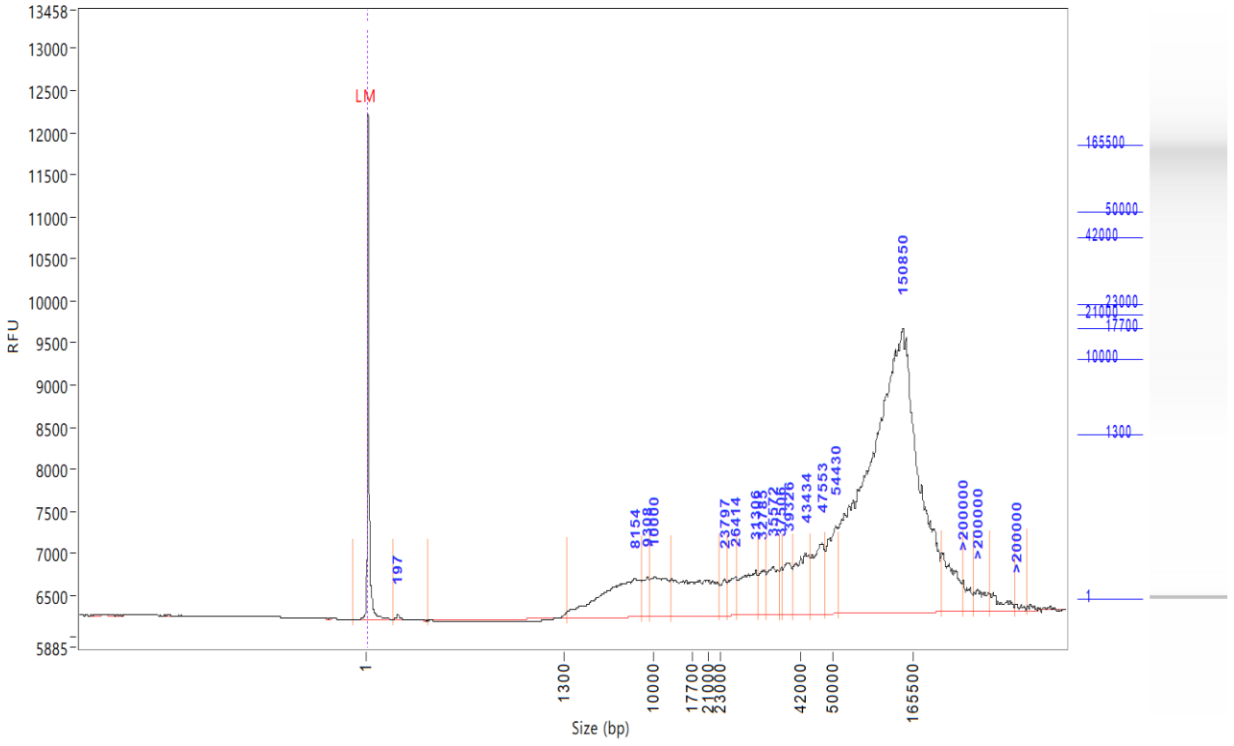


Images taken from Cache DNA youtube channel https://www.youtube.com/watch?v=E33jq8k430c

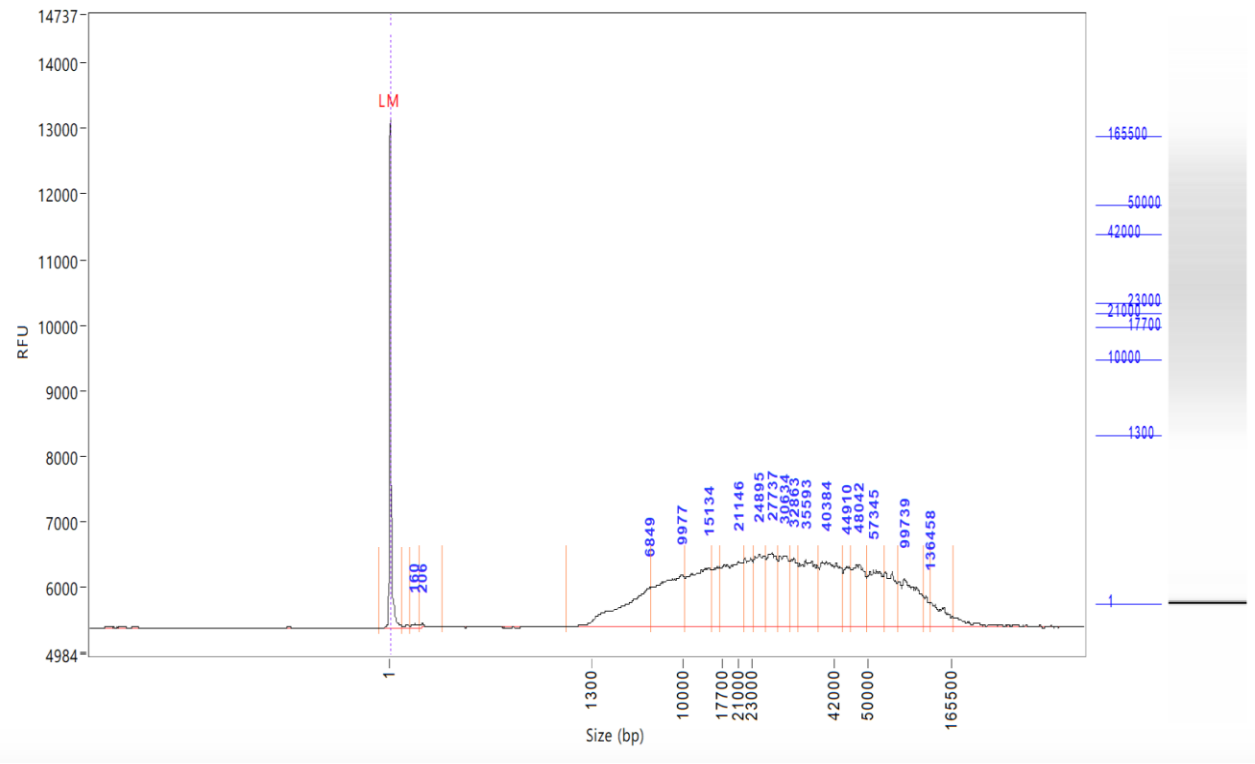
Our results

- Lymphocytes grown in culture
- Extracted using Qiagen Genomic DNA kit
- Performed Cache protocol as recommended

Raw DNA



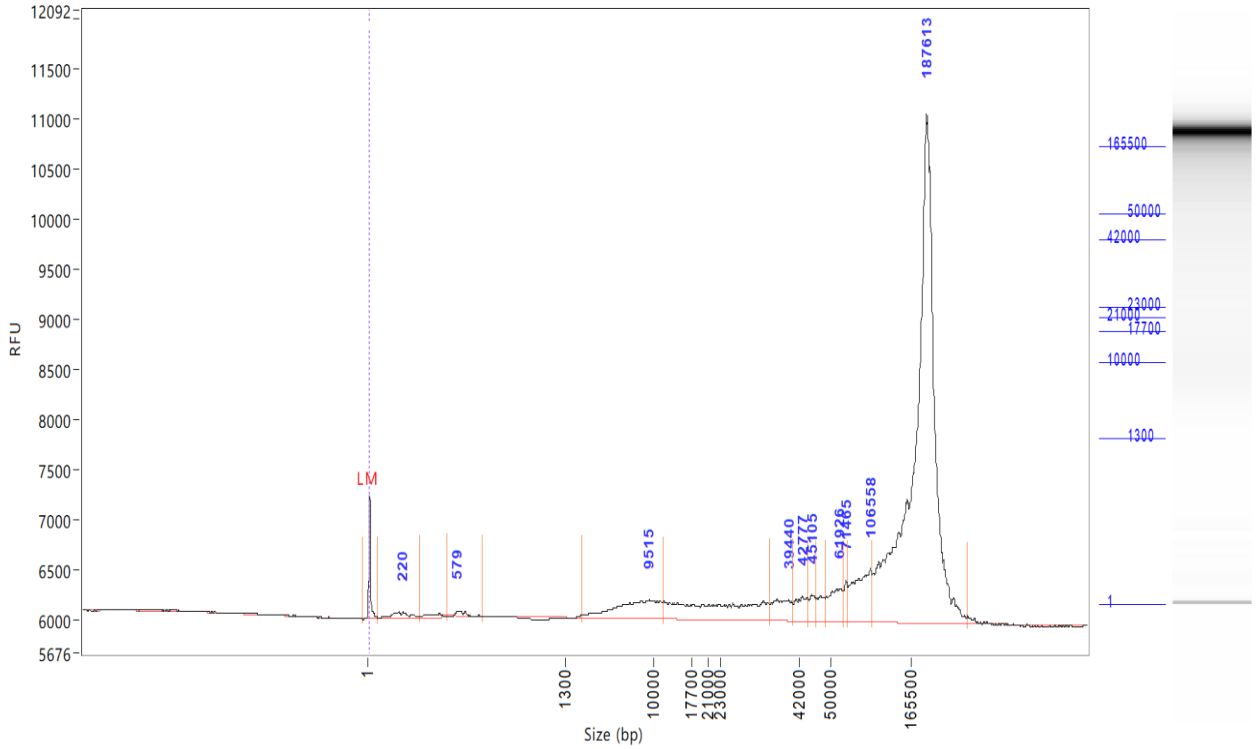
Cache DNA



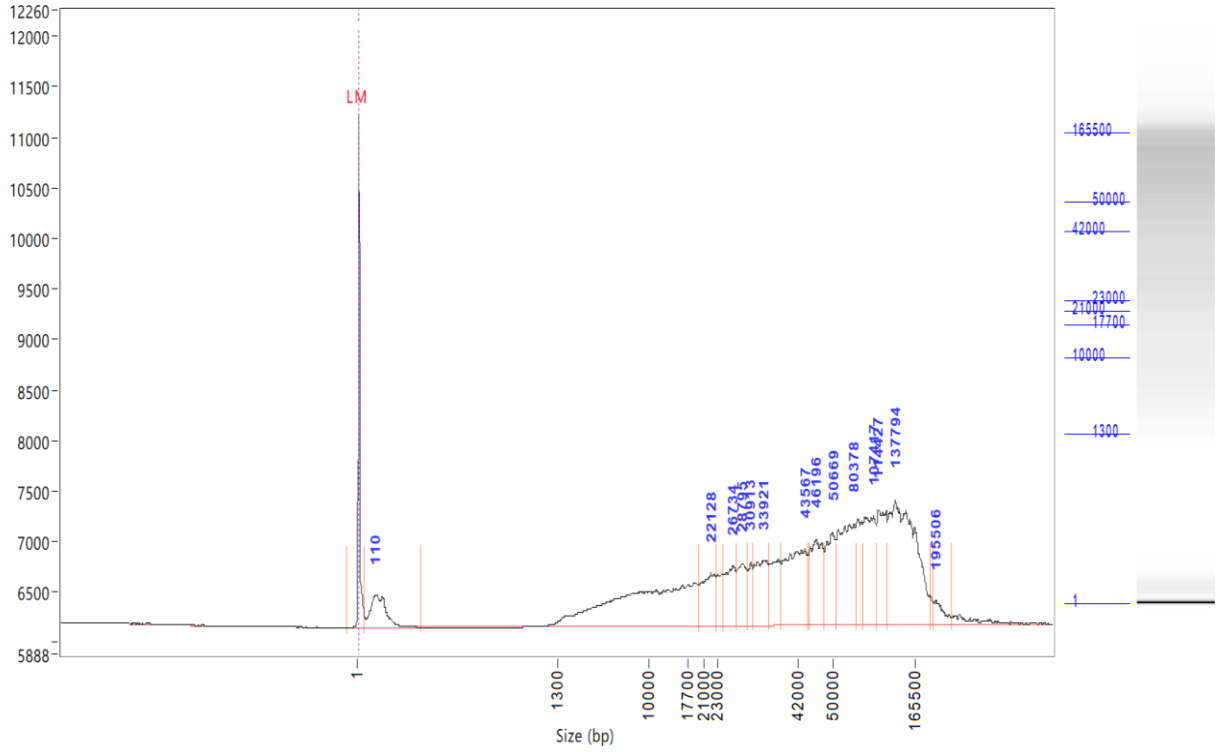
Field experiment

- Same lymphocyte cells as control
- Added lysis buffer to cells then straight into the Cache protocol
- Full DNA extraction kit not necessary which means less to pack into the field

Raw DNA Lysate



Cache DNA Lysate



Conclusions

1. Room temperature storage allows for less refrigerators and freezers.
2. Less lab equipment means more lab space.
3. No sample loss due to delays in shipping samples.

Off label benefits

4. Streamline and simplify sample collection in the field

Acknowledgments





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- Provided us with the Caching kit