

ABSTRACT

STABILIZING FORENSIC DNA SAMPLES USING TREHALOSE OR SORBITOL

In the forensic field, the preservation of DNA samples is crucial in criminal investigations. Presently all liquid blood samples are dried on filter paper and stored frozen until DNA analysis is requested. The cost to maintain the freezers is substantial and if the DNA could be preserved room temperature then the cost of storage of evidence would be significantly reduced. In the present study blood samples were exposed to several environments to determine if an osmolyte could preserve DNA. The samples were stored frozen, at room temperature, at 60°C, at 75°C, and 90°C for 12 days, 1, 2, and 4 months. Quantiblot results showed that more DNA was recovered from samples treated with 10% trehalose or sorbitol than the untreated samples. The 10% and 20% trehalose samples were the least degraded after 2 months under the various conditions, as shown by the yield gel assays and the STR analysis.

Alicia Michelle Moe
December 2005