PRESSURE CYCLING TECHNOLOGY (PCT): POTENTIAL APPLICATIONS IN FORENSIC SAMPLE PREPARATION

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Recent emergence of new technologies has enabled forensics scientists to significantly improve analysis of DNA samples. These technologies have been shown to enhance DNA testing in several important areas, including sexual assault, bone, and touch sample cases. However, new methods of sample extraction have failed to keep pace with analytical methods, subsequently limiting their full capabilities. Here we report advances in the use of pressure cycling technology (PCT) by several PBI collaborators. Their experiments show that PCT can improve either the yield or quality of DNA from poorer quality bone, as well as shorten the time-to-result for identification from typical bone samples. Other studies will be described which demonstrate that PCT can improve the yield of DNA from low copy number touch samples, and thus, improve the potential for identification. We also report on a new method, in development, that uses PCT to selectively enrich for DNA extracted from sperm collected in rape kits. This method could help relieve the back-log of rape kit samples and could lead to better and more rapid identification of criminals. ⌘