

EVALUATION OF A NOVEL DNA EXTRACTION TECHNIQUE, FOR OPTIMAL RECOVERY OF DNA FROM EPITHELIAL CELLS

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Humans shed approximately 400,000 epithelial cells daily, which can be a useful source of DNA evidence. However, DNA obtained from touch samples, that leave only a few cells behind can prove to be difficult as the collection and the extraction process result in significant loss of valuable DNA. It is therefore essential that all the procedures from sample collection through to genetic profiling be optimized to ensure the best possible results from low abundance samples. This study is a comparative analysis between commercially available Qiagen DNA extraction kits and the novel extraction technique, pressure cycling. Pressure Cycling Technology (PCT) uses rapid cycles of hydrostatic pressure ranging from ambient to ultra-high levels to disrupt bio-molecular interactions. The two methods were compared using quantitative PCR, samples consisting of human epithelial cells were used and data indicates the addition of PCT to Qiagen protocols, resulted in approximately a 20% increase in DNA yield.