

THE EASICOLLECT™ DEVICE WITH INDICATING FTA® ELUTE FOR THE COLLECTION OF BUCCAL CELLS AND DOWNSTREAM ELUTION OF AMPLIFIABLE DNA.

Betsy Moran, Linda Battalagine, Nancy Nelson and Breck O. Parker
Whatman, Part of GE Healthcare, 63 Community Dr., Sanford, Maine 04073

Indicating FTA Elute was developed for the identification of biologically clear sample placement when applied to FTA matrices. Transfer of clear buccal samples to Indicating FTA Elute clearly marks the boundaries of the sample on the matrix allowing for easy punching and DNA elution. The FTA Elute sample collection matrix is well established in the field of collection and long term room temperature storage of biological samples. The chemically impregnated matrices serve to safeguard the sample from damaging elements effectively providing the user with a source of high quality nucleic acid. EasiCollect was developed with FTA as the buccal cell receiving matrix for use in human identification procedures, but the matrix has been limited in its effectiveness for downstream liquid handling processes. We have prepared Indicating FTA Elute for placement into the EasiCollect device and show its utility for collecting buccal cells onto a DNA eluting matrix for easy liquid handling facilitating downstream amplification processes. We show that DNA yield data eluted from buccal cells on 2 mm discs of Indicating FTA Elute vary from donor to donor, from as little as 1.32 ngs DNA to 25.85 ngs of DNA. DNA yield maps that mark the distribution of buccal cells transferred by the EasiCollect applicator onto Indicating FTA Elute matrices generate a reliable punch area for DNA isolation. STR analysis of fifty buccal DNA samples, five each from ten different donors, were generated using ABI's Identifiler and Promega's Powerplex 16 systems. Of 800 possible allele calls, only 2 loci failed to call fueling an error rate of only 0.3%. The eluted DNA from buccal cells on Indicating FTA Elute of ten different donors was also analyzed in allelic discrimination assays using real time PCR on the ABI 7900HT. The assays showed 40 out of 40 correct SNP allele calls indicating that the DNA eluted from the matrices were of high quality and of sufficient yield to support Allelic discrimination assays. EasiCollect buccal samples were evaluated for the presence of RNA and the data shows that less than 1 ng of hsp1 RNA can be harvested from the matrix after 3 days of room temperature storage.