

UNUSUAL EXHIBIT MATERIAL YIELDING SUCCESSFUL DNA PROFILES USING PCR STR TYPING

Wickenheiser, R.A., Roney, J.M., Hummel, K.H.J., Szakacs, N.A., MacMillan, C.E., Kuperus, W.R., Walker, T.J., Hrycak, T.L., Reader, L.J.E., Fenske, B.A., Hanniman, J.L., Faris, J.S., Lett, C.M., DeGouffe, M.J., Golin, M., and Jobin, R.M.

Royal Canadian Mounted Police Forensic Laboratory Regina, Regina, Saskatchewan, Canada



During the commission of an offence, a wide variety of materials are often contacted by offending individuals. DNA bearing material is left behind, which can be successfully typed, and linked to the offender. A number of cases will be presented where DNA from unconventional sources was successfully profiled, thereby associating an offender with a crime scene, or to a complainant.

In cases of crimes against the person, blood is often used for association. In this presentation, focus will be placed on biological material located on more obscure and unusual exhibit materials encountered in casework. Skin cells are transferred through handling weapons and a wide variety of other objects. On occasion, eating or drinking utensils are used at crime scenes and discarded. In cases of sexual assault, primary transfer of sperm from offending individuals is often found in victim's swabs and garments. Here we show the secondary transfer of victim's cells to the undershorts of accused individuals. Garments worn by individuals have also been successfully DNA typed, through the sloughing of skin cells by wearing.

DNA typing using PCR STR technology has also demonstrated success with very challenging samples. A case will be highlighted involving exhibits which have not yielded fingerprints through cyanoacrylate fuming and metal deposition, yet have been successfully DNA typed.

Use of ethyl alcohol as an alternative swabbing solvent has also yielded profiles where no profile was obtained through previous swabbing with distilled water.

A wide variety of exhibit material is encountered at crime scenes and on the person of involved individuals. Many of these exhibits can be easily overlooked if their forensic potential remains unknown. These successful cases will reveal some of that potential.

