

CONSUME LESS AND OBTAIN DIRECTLY MORE: THE INNOVATIVE MICROFLOQ® BREAKS FORENSIC DNA PROFILING CODES.

Hubac S, Robvieux F, Tesio P.

Forensic Science Laboratory of the French Gendarmerie (IRCGN).

Standard Forensic DNA analysis workflow including purification and quantification step can be time-consuming, labor-intensive and costly. Additionally, purification and quantification methods result in loss of DNA which could affect successful profiling. The microFLOQ® (MF), is an innovative nylon flocked swab conceived and patented by the Forensic Science laboratory of the French Gendarmerie (IRCGN™) and developed by Copan Flock technologies company. The MF uses a very small portion of sample and allows direct rapid human DNA (hDNA) amplification and profiling in less than 2 hours with standard instruments, eliminating the purification and reducing the risk of contaminations. The calibrated flocked area of fibers normalizes the quantity of material collected and enables to skip the quantification step. The objective of this study was to illustrate the MF collection efficiency through two interesting cases: an air crash involving two military helicopters and a bloody crime scene. For the air crash, MF allowed rapid and sensitive hDNA profiling leading to identification of fragmented bodies and giving information about the circumstances of the crash. For the bloody crime scene, MF allowed, with the same device, rapid identification of human blood and hDNA profiling leading to identification of two different contributors.