

DNA Extraction on Microfluidic Devices

REFERENCE: Bienvenue JM, Landers JP: DNA extraction on microfluidic devices; *Forensic Sci Rev* 22:187; 2010.

ABSTRACT: Purification of DNA is a critical step of the genetic analysis process, particularly when the interrogation of forensic samples, often contaminated by exogenous and endogenous inhibitors, is considered. Recently, examples of microfluidic DNA purification strategies are becoming more prolific, with successful extraction of DNA from a variety of forensically relevant targets demonstrated using these microscale techniques and systems. From silica-based purification strategies that mimic their macroscale counterparts, to novel functionally derivatized systems, these purification tools represent the newest schemes for rapid, automated, closed-system sample processing that can integrate seamlessly with downstream microscale analysis techniques. The work presented herein highlights the development of novel microscale purification systems for extraction of DNA, their potential application in forensic analysis, and their potential for future incorporation in micro total analysis systems (μ TAS).

KEY WORDS: DNA, forensic analysis, microfluidics, RNA, volume reduction.
