

MiniFiler for Degraded or Inhibited Samples



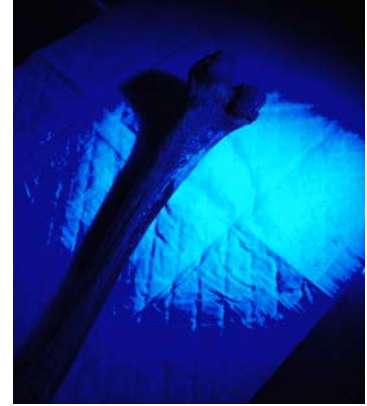
Technical Bulletin 40-028

Setting the Standard for Quality DNA Identification

DNA Degradation

The quality of DNA samples collected from a crime scene are often less than ideal, having been exposed to harsh environmental conditions for prolonged periods of time. As a consequence of exposure to water and heat, DNA degrades into small fragments from a number of bacterial, biochemical or oxidative processes.

Successful analysis of degraded DNA from compromised forensic evidence improves considerably with smaller-sized amplicons. Unfortunately, amplicon size and the ability to amplify extremely degraded DNA were not considered during the commercial development of the multiplex kits that incorporate the 13 CODIS loci. Consequently, several of these loci have a large number of repeat units or wide allele ranges that are not favorable for generating small amplicons.



PCR Inhibition

Biological fluids from crime scenes are often associated with soil, sand, wood, textile dyes, leather or other substrates that contain materials which may co-extract with the DNA and prevent PCR amplification. Samples containing PCR inhibitors often produce partial DNA profiles that appear similar to samples that contain degraded DNA.

MiniFiler™ Kit

The MiniFiler Kit is the world's first commercially available miniSTR kit and it substantially increases the ability to obtain DNA results from compromised samples that previously would have yielded limited or no genetic data.

The MiniFiler™ Kit tests for the following nine challenging CODIS loci: D13S317, D7S820, Amelogenin, D2S1338, D21S11, D16S539, D18S51, CSF1PO, and FGA and compliments other autosomal STR kits that are currently being used for forensic casework. Loci that drop out using conventional STR kit technology may be recovered using the MiniFiler™ Kit. The kit also combines a proprietary buffer with optimized thermocycling parameters to enable the system to overcome inhibitors commonly encountered in forensic samples

The MiniFiler™ Kit is an extremely valuable tool in casework that originally produced minimal to no DNA results, missing persons identification and disaster victim identification. Use of a dual-amplification strategy using MiniFiler™ and Identifiler™ Kits is the best strategy for recovery of all 15 autosomal markers from compromised samples.

Chromosomal Laboratories is committed to being on the leading edge of science and continually invests in technology to extend the boundaries of its capabilities.



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