

# Canine DNA Profiling in Forensic Casework: The Tail Wagging the Dog

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**REFERENCE:** Berger C, Berger B, Parson W: Canine DNA profiling in forensic casework: The tail wagging the dog; *Forensic Sci Rev* 21:1; 2009.

**ABSTRACT:** The popularity of dogs as faithful human companions instigates forensically relevant issues on a regular basis. Domestic dogs take an active role as the causes of accidents and as perpetrators of attacks; even more frequently, dogs act as links between victims and suspects in crime cases due to the fact that dog owners/keepers live in an environment rich with canine material. Mitochondrial and nuclear DNA analyses of canine cells have been applied successfully in individual cases. However, a review of published casework amply demonstrates great interlaboratory variability not only in methodological but also in general terms. We screened the literature for application of canine DNA analysis in the forensic context and found 12 publications presented by 10 different laboratories. In almost no case did employed DNA markers widely overlap between these studies. Even worse is the situation with respect to allele nomenclature, where a plethora of variants has been reported by the different groups. Despite great technological achievements in the recent past, it seems that in forensic canine DNA analysis the cart was put before the horse. The canine forensic field faces the urgent need for general standardization and harmonization activities such as those that have taken place in the human forensic field in the past years. In particular, the nature and selection of DNA markers to be tested, the implementation of a generally compatible allele nomenclature, and a settlement on standardized statistical calculation methods adopted for the specific genetic peculiarities of dog populations need thorough consideration.

**KEY WORDS:** Canine forensic cases, canine mtDNA, canine STR.

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