



Therion provides DNA profile services that are state-of-the-art and well suited for addressing questions related to breeding, behavior, ecology, and population genetics.

## DNA Profile Analysis for Dogs

### *Applications:*

- Sire Verification
- Registry
- Individual Identity
- Breed Differentiation
- Identification of DNA Markers Linked to Performance Traits and Genetic Disorders

### *Canine Identification*

The ability to address questions of identity in dogs is now dramatically enhanced. The DNA profile test offered by the Therion International is more powerful than conventional blood protein analysis because it detects DNA-sequence information which is highly variable. This technology provides a sensitive method for sire/dam verification and individual identification. It can also be used to screen for markers linked to performance traits and genetic disorders.

Following are descriptions of two of the many canine genetics projects which have been conducted by Therion.

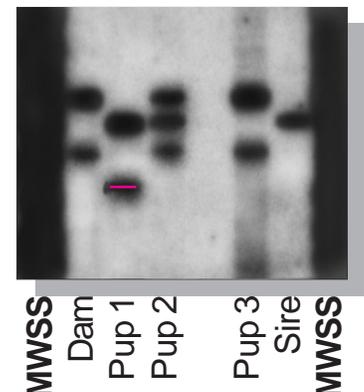


*Greyhound*

### *Sire Verification*

A greyhound bitch was believed to have been inseminated by two males. To verify sire identity, DNA profiles were produced from the Dam, her pups, and the male to which she had been purposely bred. The DNA probe used was OPT™ -05 and a portion of the autoradiograph is shown below.

*Parental/Offspring  
DNA Profiles*



Note that a genetic marker (indicated at right) found in the DNA profile of Pup 1 appeared neither in the Dam's profile nor in that of the alleged sire. This confirmed that the female had been inseminated by a second male and excluded the preferred male as sire of the pup. Other genetic markers and additional DNA probe assays corroborated this conclusion.

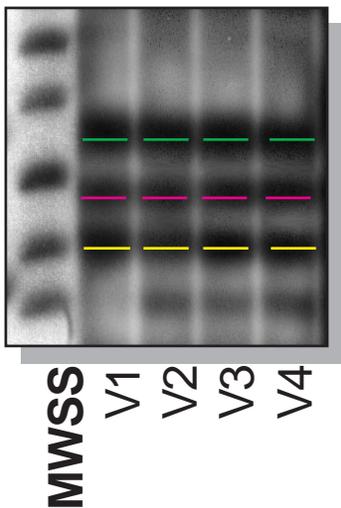
## Breed Differentiation



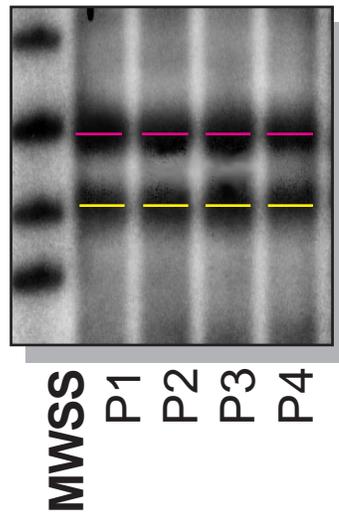
Vizsla

A genetic marker that differentiates between vizslas and pointers was identified (indicated below) using the DNA probe OPT™-03. Note that a “triplet” banding pattern appears in all four vizslas (V1-V4). Only a “doublet” pattern appears in the pointers (P1-P4); the top band is missing. By using other DNA probes, we have identified two additional breed-specific markers that can be used to distinguish these breeds.

### Vizsla DNA Profile



### Pointer DNA Profile



**William F. Gergits**  
Managing Member  
Marketing and Business Development

**Nancy J. Casna, Ph. D.**  
Managing Member  
Laboratory and Operations

**Therion International, LLC**  
36 Phila Street  
Saratoga Springs, NY 12866

**(518) 584-4300**  
**(518) 584-2310 Fax**