

Forensic Animal Investigations

CSI:

CRIME SCENE INVESTIGATION

CSI: Vet

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Forensic science

The application of scientific knowledge and techniques *to legal questions*.

Forensic medicine

The application of scientific and medical knowledge/ techniques *to legal questions*.

Forensic veterinary medicine

The application of scientific and medical knowledge/ techniques *to legal questions involving animals*.

Questions to be resolved

- 1) Presence, species of origin of animal tissues
- 2) Confirmation/elimination of suspect individual animals
- 3) Maternity/paternity questions
- 4) Sex of animal tissues

Diverse, case by case
Human component important
Can be high profile

Who requests the work?

- 1) Lawyers (legal profession)
- 2) Police organizations (Police forensic labs)
- 3) Game and wildlife organizations
- 4) Federal security agencies (Border Services)

Lab issues to be addressed

- 1) Sample procurement, identification
- 2) Biological integrity and preservation
- 3) Sample contamination (external, internal)
- 4) Sample preparation, tests to be performed
- 5) “Legal” security and control of samples

What type of analysis?

Mostly (not exclusively) DNA

What type of sample for analysis?

Fresh (or dried) tissue, meat, skin, carcass

Fixed tissues (leather, skins)

Cooked tissues

Blood; dried blood

Saliva, body secretions

Hair (hair roots)

DNA is very stable when dry or frozen

Heat, bacterial contamination are the enemies of DNA

DNA processing lab:

- ➔ 1) DNA extraction
- 2) DNA amplification
- 3) DNA sequencing
- 4) Analysis



DNA processing lab:

1) DNA extraction

➔ 2) *DNA amplification*

3) DNA sequencing

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