



FORENSIC ISSUES IN DNA PROFILING

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EXCEPTIONS TO DNA EVIDENCE

- With the exception of red blood cells, every cell in your body has DNA.



EXCEPTIONS TO DNA EVIDENCE

- And with the exception of identical twins, everyone's DNA is different.



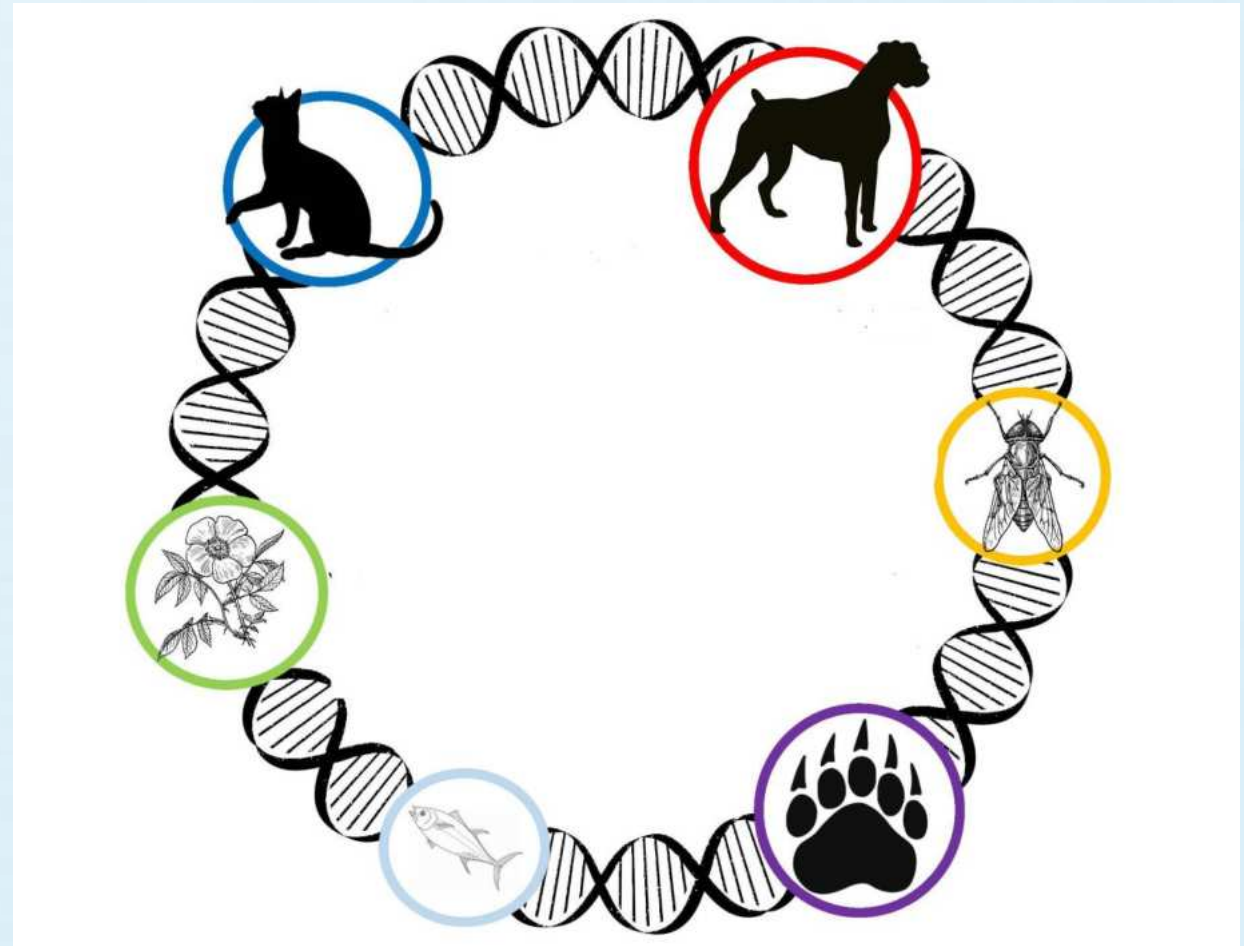
EXCEPTIONS TO DNA EVIDENCE

- DNA samples need to be collected properly. Immovable objects must be scrutinized completely, and evidence collection is crucial.



EXCEPTIONS TO DNA EVIDENCE

- DNA extraction for animal/wildlife samples is not done in the same laboratory.



EXCEPTIONS TO DNA EVIDENCE

- The target DNA template may not amplify due to the presence of PCR inhibitors in the extracted DNA.

PCR inhibitors

Sodium dodecyl sulphate
KCl
Tannic acid
Urea
Bile
Salt
Phenol
Ethanol
Methanol
Polysaccharides
Melanin
Cell wall proteins
Immunoglobulins
Chaperon
Collagen
Haemoglobin
Protease
Nuclease

EXCEPTIONS TO DNA EVIDENCE

- Errors due to low DNA template - degraded exposure to the environment or harsh chemicals like acids and alkalis.



ISSUES WITH DNA PROFILING IN INDIA

- No centralized DNA database for tracking criminals or unrelated crimes
- Poor collection & preservation of evidence
- Inadequate and limited DNA fingerprinting facilities and resources
- Limited and inadequate experience in DNA profiling
- Lack of quality management



ISSUES WITH DNA PROFILING IN INDIA

- Lack of technology – slow implementation of improved in technology
- Issues related to tampering of evidence or breaking of chain of custody.
- Non-human DNA analysis is limited or negligible
- People are unwilling to volunteer their blood/buccal samples for analysis
- Misconception related DNA fingerprinting.

Bone fragments from the same individual are color-coded.

Bone
fragment
number:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
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Figure 7-10 Biology: Science for Life, 2/e
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