

DNA Fingerprinting

PRACTICAL SESSION



DNA Fingerprinting

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TOPICS TO BE LEARNT

 Lesson 1. Introduction

 Lesson 2. Different types of DNA evidences

 Lesson 3. Instrumentation



TOPICS TO BE LEARNT



Lesson 4. DNA Extraction and Fingerprinting

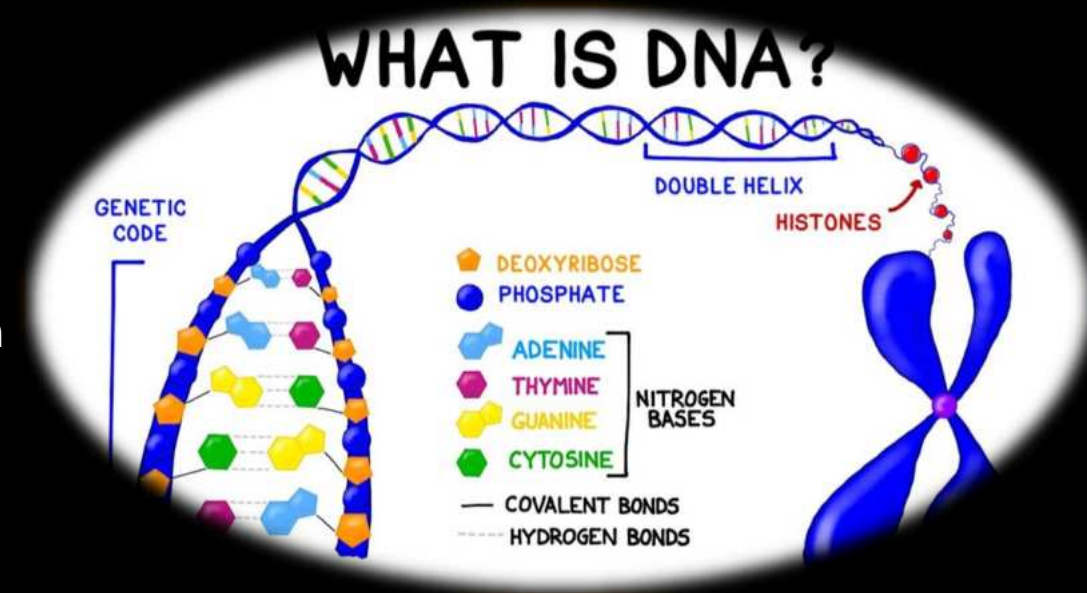


Lesson 5. Analysis and Interpretation of Results



Introduction

- What is DNA? → Hereditary material
- Where is it present? → Nearly every cell
- Why is it important? → Comparison/elimination
- Forensic Application? → Criminal investigation
Paternity testing
Maternity testing
Driver swapping
Person identification



HANDLING DNA EVIDENCES



Gloves & masks	Yes
cleaning of instruments/apparatus	Yes
touching area of suspicion	No
Coughing or sneezing	No
Air dry before packing at room temperature	• Heat/ sun – degrades DNA • Moisture – bacterial growth
Packing	Paper bags/envelope; no plastic; no staple
Seal, label	maintaining chain of custody
Control Samples	comparison/elimination



DNA Evidences in Forensics

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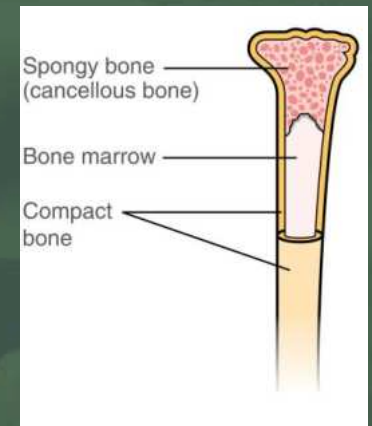
Blood



Hair



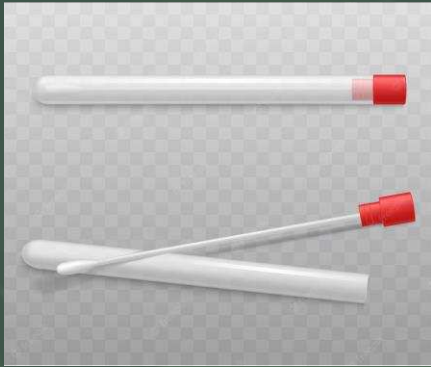
Bone



DNA Evidences in Forensics

8

Saliva/ sweat/ mucus/
skin cells/urine



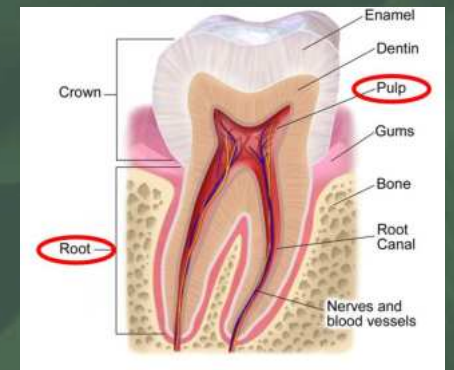
Semen/ Vaginal
Discharge



Nails



Tooth



Collection of nail scrappings



Collecting hair samples from fabrics



Buccal Swab collection

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Instrumentation



PIPETTE



VORTEX



CENTRIFUGE

Instrumentation



QUBIT
FLUOROMETER

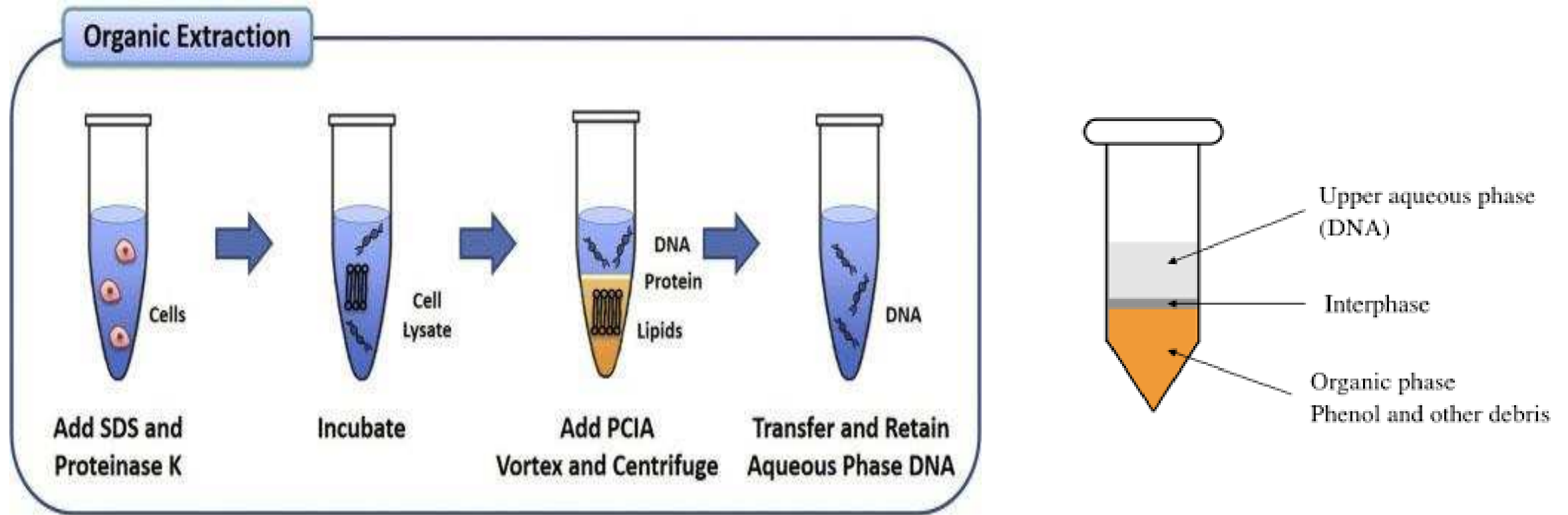


THERMOCYCLER

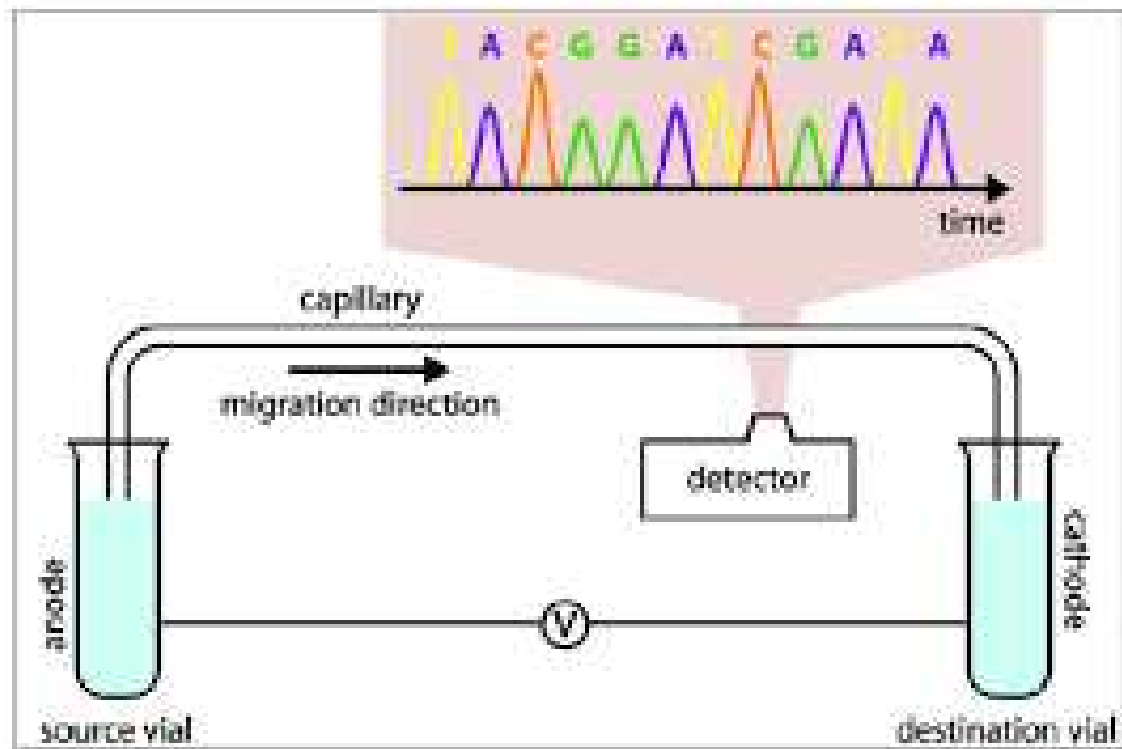


3500 GENETIC
ANALYZER

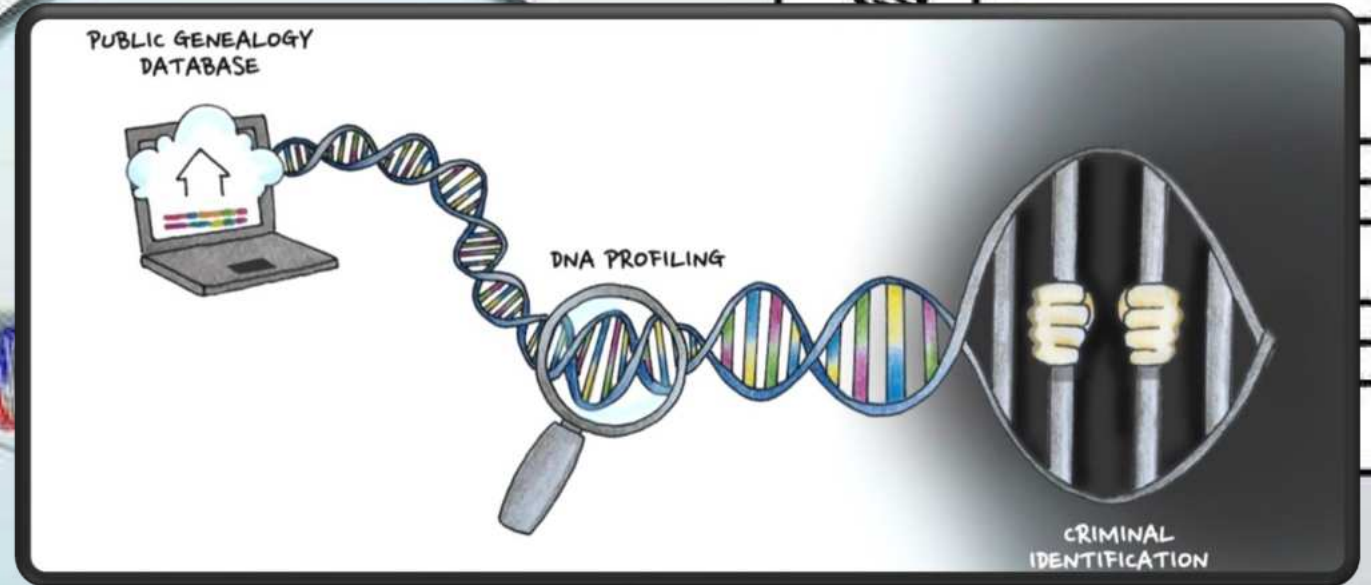
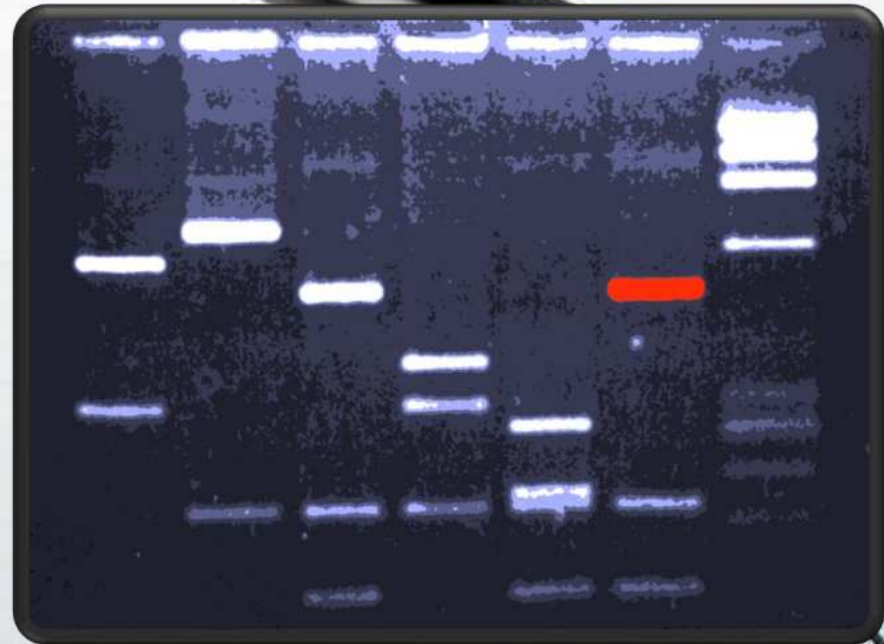
DNA EXTRACTION



Capillary Electrophoresis



RESULT

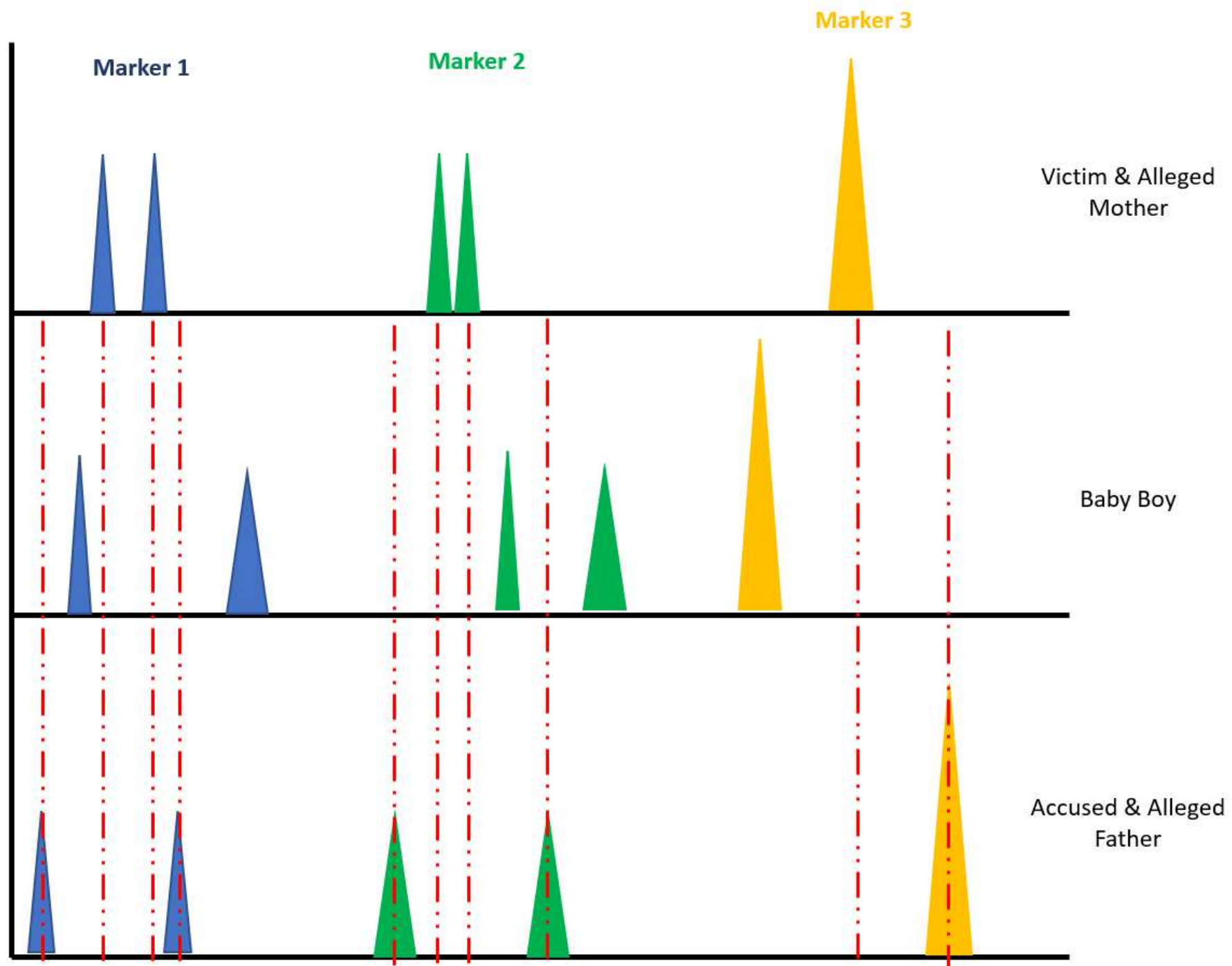


A form labeled "PROFILE" with a placeholder for a photo and several lines for text entry.

Electropherogram

Report

Marker Names	Child (Born Via Surrogacy)	Single Father (American Citizen)
Marker 1	16, 17	17, 20
Marker 2	5, 9.3	5, 7
Marker 3	7, 13	9, 13
Marker 4	12, 14.3	14.3, 17
Marker 5	15.3, 25	15.3, 32.2
Marker 6	10, 13.2	10, 16
Marker 7	11, 11	8, 11





Thank You!

