



Review of Serology Cases

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Forensic Scientist - Biology (from 1980-2022)

Serology Testing at DFS



- Virginia statewide crime laboratory system started in 1972
- Accredited in 1989
- Conventional serology testing 1972-1994
 - ABO testing, and enzyme/serum protein (PGM, PGM subtype, Pep A for secretions and additional enzymes for blood plus serum proteins Hp, Gc/Tf)
- 1994 discontinued, replaced with DNA testing

Early Days: **THEN** and NOW



- No Procedures Manuals (brief lab writeups)
- No Lab Accreditation for Forensic Labs
 - Predates QA document, external proficiency testing programs
- Method Validation – informal/test it in your lab on known samples
- Examiners received evidence directly from Investigators
- Reports dictated into a dictaphone and a secretary typed on a typewriter (no computers)
- Peer Review of analytical results
 - Did take place, but uncertain if it was a 100% requirement.

Early Days: **THEN** and NOW



- Bench Notes:
 - Purpose: viewed as for examiner's use only
 - Sufficient to enable the examiner to report findings
 - Never subpoenaed for Discovery/Court
 - Not nearly as complete, then, as currently done
 - Some (optional) worksheets were used

MJB: Exemplar 'Worksheet'

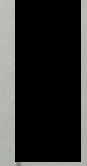


	(17) item 2	(18) item 3	(19) ① item 4	(20) ② item 5	(21) item 7	(23) ③ item 8	(25) item 9	(24) ④ item 10	<i>Baby's blood</i>
BENZIDINE TEST	+	+	+	+	+	+	+	+	
PHENOPHTHALEIN TEST	+	+	+	+	+	+	+	+	
PRECIPITIN TEST	+	+	+	+	+	+	+	+	
A - C	-	-	- +	- +	+ +	+ +	-	+ +	+ +
B - D	+ ²⁻³	+ ²	+ ² +	+ ² +	+ ²⁻³	+ ² +	+ ²	- +	+ +
H - E	+ ⁴	+ ²	+ ² -	+ ² -	+ ²	+ ² -	+ ²⁻³	+ ² -	+ ²
H - c			+ ²	+ ²		+ ²		+ ²	+ ²
H - e			+	+		+		+	+
CONCLUSIONS FROM ABOVE	Swabs and cuttings								
A - C									
B - D									
H - E									
H - c									
H - e									

Ab- 81

DATE 6.22.74

FS# 73



Blood ID and Species Tests



	(14) Stem 9B	(15) Stem 10	(16) Stem 11 control	(17) Stem 11 #1
SENZIDINE TEST	+	+	-	+
PHENOPHTHALEIN TEST	+	+	-	+
PRECIPITIN TEST	+	+	-	+
<i>MP</i>	2-1	2-1		2-1
A - C	+	+	-	+
B - D	-	-	+	-
H - E	+	+	+	+
M - C			+	+

ABO & Rh - Absorption/Elution (Blood Antigen Tests)



PHENOPHTHALEIN TEST			+	+	-
PRECIPITIN TEST			+	+	-
		<i>Np</i>	<i>2-</i>	<i>2-</i>	
A -	C		+	+	-
B -	D		-	-	+
H -	E		+	+	+
M -	c				+
N -	e				+
<i>EAP / EcD</i>			<i>CB / 1</i>		
CONCLUSIONS FROM ABOVE					

Enzyme and Serum Protein Typing Results



PHENOPHTHALEIN TEST		+	+	-
PRECIPITIN TEST		+	+	-
	<i>Np</i>	<i>2-1</i>	<i>2-1</i>	
A - C		+	+ -	-
B - D		-	- +	-
H - E		+	+ +	
M - c			+ +	
N - e			+ +	
	<i>EAP / EcD</i>		<i>CB / 1</i>	
CONCLUSIONS FROM ABOVE				

Enzyme and Serum Protein Typing Results



- Recording of Results
 - Summarized on worksheet
 - Sometimes recorded directly on lab request form
 - A Log Book was used for enzymes
 - “1st read, 2nd independent read”
(began photocopying for file notes, so these books were not retained)

ABO - Absorption/Inhibition (Secretion Typing)



	(25) item 8	(26) item 8 control	(27) item 9	(28) item 9 control	(29) item 9 control
BENZIDINE TEST					
PHENOPHTHALEIN TEST					
PRECIPITIN TEST					
<i>Amelasa</i>	7-1-	7-1-	2/2/2	1-1-	
A - C	-	+	-	+	
B - D	+	+	+	+	
H - E	-	+(w)	-	fw	
M - c					
n - e					
CONCLUSIONS FROM ABOVE	A	-	A	-	

General Observations



- Typically, no written conclusions comparing the results to the reference samples until late 1980s
- No statistics in the reports, some calculations are found in the notes
- Results for known reference samples are not reported when no typing results are obtained for the evidence samples
- Also, the reverse is noted that, on occasion, the typing results for the evidence are not reported if reference samples are not available or if the reference samples did not produce results
 - Reference samples are requested in the reports for further comparisons
- Some body fluid screening results are recorded in the notes but not reported (most commonly amylase indicator of saliva)