

## DNA - Banawa Robbery with Homicide

In the small town of Banawa, nestled among the hills of Cebu, the tranquility was shattered one fateful night when a violent crime took place. The victim, a woman in her early 30s, was found lifeless in her modest home, the victim of a brutal attack. The local police, led by Chief Inspector Alvino, arrived at the scene immediately.

The evidence was sparse: there were no obvious signs of forced entry, no witnesses, and no immediate suspects. But one clue stood out — a small tuft of hair, tightly clutched in the victim's right hand. It was as if she had fought desperately against her attacker.

The police quickly sent the hair sample for forensic analysis, where scientists extracted the DNA from the root. The DNA profiles taken from the hair root follicles and the suspects are as follows:

Marker (CODIS)	Hair DNA Profile (SOC)	Suspect 1	Suspect 2	Allele Frequency 1	Allele Frequency 2	Frequency Product
AMEL	X,Y	X,Y	X,Y	0.50	0.50	
CSF1PO	11,12	11,12	12,13	0.16	0.17	
D13S317	9,11	9,11	9,12	0.13	0.10	
D16S539	12,14	12,14	12,15	0.14	0.15	
D18S51	14,15	14,15	14,16	0.12	0.11	
D21S11	29,31	29,31	30,31	0.09	0.10	
D3S1358	15,17	15,17	15,16	0.17	0.15	
D5S818	11,12	11,12	12,12	0.15	0.16	
D7S820	10,11	10,11	9,11	0.16	0.17	
TH01	6,9	6,9	6,7	0.12	0.13	
TPOX	8,11	8,11	8,11	0.13	0.14	
vWA	17,18	17,18	16,18	0.14	0.15	
D8S1179	12,14	12,14	12,13	0.15	0.16	
FGA	21,24	21,24	21,24	0.12	0.11	
D19S433	13,15	13,15	13,16	0.17	0.14	
D2S1338	19,20	19,20	19,21	0.11	0.10	
D12S391	17,19	17,19	17,20	0.13	0.12	
D1S1656	14,16	14,16	15,16	0.16	0.15	
D6S1043	12,13	12,13	13,14	0.14	0.13	
D10S1248	14,15	14,15	13,15	0.15	0.14	

Blank Rows for Frequency Product Calculation:

- Frequency Product:

1. Explain the following:
  - a. What does “CODIS” mean?
  - b. What are the “markers” under the CODIS column?
  - c. What are the set of numbers under the DNA profile columns
  - d. What are allele frequencies
  - e. What is a “frequency product” and how do you compute it?
  - f. What is a CPI and how do you compute it?
  - g. What is the “Probability of a Random Match” and how to compute it?
  - h. What is the “Probability of Exclusion” and how do you compute it?
2. Compute the following:
  - a. Frequency product column.

- b. CPI.
  - c. probability of a random match
  - d. probability of inclusion
3. The 2 suspects who were last seen with the victim: Suspect 1 is Menardo Mercado, a 43-year-old neighbor and Suspect 2 is Boy Bisquerra, 23 year-old water delivery man. Based on the above computations, who between the suspects matches the DNA profile from the SOC?
4. You were assigned to the prosecution team for the case. Prepare an Information.