

MIX13 – Mixture Interpretation Study - Case Information

Case 01

Evidence: sperm fraction from a vaginal swab.

A female meets a male acquaintance at a bar after work and they return to her apartment for a nightcap. She recalls the drink tasting funny and then wakes up 14 hours later after a co-worker has her landlord to open her apartment. She is confident that she did not have consensual sex and was probably drugged. She reports the incident to the police and goes to the hospital for an examination. The accused male gives a buccal swab for comparison.

Case 02

Evidence: swab from the handle of a handgun used in a homicide.

A convenience store employee was murdered after a robbery. Video from the store's security camera show two perpetrators enter the store, with one individual holding the gun on the victim and the other empties the cash register and takes two plastic bags full of cigarettes from behind the counter. Before leaving the store, the employee triggers an alarm, and is shot three times with the handgun. The police find the handgun in the parking lot near the entrance of the store, apparently dropped by the shooter during the escape. Ballistics comparison of bullets fired from the weapon confirms the gun was used to commit the homicide.

DNA has been collected from four suspects identified during the investigation.

NOTE: Boston University sample – use ILS 600 LIZ for Identifiler, AT = 30 RFU; ST = 150 RFU

Case 03

Evidence: sperm fraction from a vaginal swab.

The female victim and her boyfriend host a party for a small group of friends on a recent Saturday. The victim had too much alcohol to drink and decided to go to bed around midnight. At some point in the middle of the night, she awoke with someone on top of her performing intercourse. She tried to resist and scream, but wasn't able to stop the assault and soon blacked out. She awoke at 5 am and found her boyfriend passed out on the couch, unaware of what had happened. The police obtained DNA samples from the two men remaining in the house according to the boyfriend before he remembers passing out: his brother (suspect A) and one other unrelated male (suspect B). Both men claimed that they left together at 2 am after the boyfriend passed out on the couch. Neither suspect locked the door before they left the house. About 12 hours prior to the assault, the victim and her boyfriend confirmed that they had consensual sex.

Case 04

Evidence: saliva swab from a bite mark on the victim.

A female waiting at a bus stop in the late evening is attacked from behind and pushed to the ground. A motorist driving by witnesses the attack, pulls his car over, and runs to her aid. As the Good Samaritan comes upon the scene, the perpetrator bites the victim on the back of her neck before running away. The motorist is able to give a good description of the perpetrator and a few days later, the police arrest a suspect. He is positively identified in a police lineup by the witness.

NOTE: Please analyze this sample with the NIST thresholds (AT = 50 RFU; ST = 150 RFU).

Case 05

Evidence: Ski mask recovered at a bank robbery.

A number of gang-related robberies have targeted several banks in the city. The robberies have typically involved 2-3 perpetrators. A ski mask was recovered in a trash can one block away from the latest bank robbery and is submitted for DNA testing. A confidential informant has implicated two suspects in at least three of the armed robberies. Police have obtained buccal swab references from the two suspects identified from the CI, and another known accomplice of the suspects.