



NEW TECHNOLOGY

M-VAC®



SUPERIOR DNA COLLECTION TECHNIQUE

DNA Labs International has years of experience from working nearly 100 cases processing evidence with the M-Vac® for DNA testing.

The M-Vac Systems®, Inc (MSI), is helping solve more crimes by collecting more DNA than ever before. The M-Vac® utilizes the same principles as a wet vacuum. It raises the sampling standard, and we have proven it can dramatically improve DNA collection.

Why M-Vac®

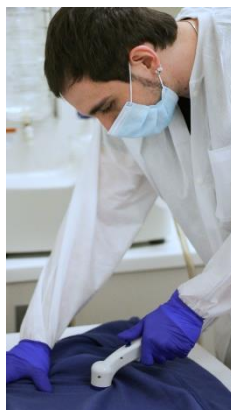
- Advancements in DNA technology have led to a higher volume of touch DNA samples being submitted to forensic laboratories.
- Touch DNA refers to samples where biological fluids are not detected, but skin cells may be left behind due to contact.
- Traditional collection methods, such as swabbing an item, are not always sufficient to collect the small amounts of DNA left behind.
- The M-Vac® system was validated by DLI in 2014 to improve recovery from touch DNA samples.

How It Works

- Using the sampling head, a sterile buffer is sprayed onto the surface of the item.
- The buffer is re-collected by applying a vacuum pressure over the sprayed area.
- The buffer now contains suspended particles including DNA from the item.
- The buffer is poured through a sterile filter under vacuum pressure which causes the DNA to bind to the filter and become concentrated.
- After allowing the filter to dry, it can be sampled and extracted.

Evidence Types

- Porous Materials – Rocks, Bricks
- Clothing - Pants Pockets, Masks
 - Touch/Contact DNA
 - If no DNA results achieved before.
- Rope
- Car Seats & Trunks
- Cold Case Evidence
- Touch/Contact DNA
- Large Surface Areas



CASE STUDIES

CASE 1 – END OF THE ROPE

- A robbery occurred where the criminals used a rope to enter through the roof of the store.
- The rope was left behind at the scene.
- During screening, the rope was tightly coiled together and the M-Vac® was used to sample the entire surface of the rope.



RESULTS

- The DNA profile indicated a mixture of at least four individuals contributing to a major male and a minor DNA profile.
- The major male DNA profile is suitable for comparison.
- Probabilistic genotyping – STRmix - may be used for the minor DNA profile.



CASE 2 – HOT ROD

- The police responded to a vehicle fire in the Police Station parking lot.
- They witnessed a man attempting to set several cars on fire by placing a bed sheet underneath them and igniting it.
- The bed sheet was left behind at the scene and collected as evidence.
- During screening, the M-Vac® was used to sample both sides of the entire sheet.

RESULTS

- The DNA profile indicated one male contributor and matched the DNA profile of the suspect.

CASE 3– BATHROOM BRAWL

- Victim's body was located in the bathroom at his workplace in 1992 after an apparent struggle.
- It appeared as though he locked himself in the bathroom and tried to exit via the ceiling to escape from his attacker.
- Based on evidence found at the scene, the victim may have been pulled down from the ceiling by his attacker.
- The M-Vac® was used to sample the victim's pants avoiding any bloodstains.

RESULTS

- A foreign male DNA profile was able to be deduced assuming the victim is one of the contributors and was uploaded into CODIS.



CASE 4 – HOTEL HELL

- Victim was found inside his hotel room beaten to death in 1987.
- He was bound to the bed and his jean pockets had been turned inside out.
- In 2011, the pockets of the jeans were sampled using the traditional swabbing method and very limited data was obtained.
- In 2016, the pockets of the jeans were re-sampled using the M-Vac®.

RESULTS

- A minor DNA profile foreign to the victim was obtained from the pockets and was uploaded to CODIS.