

Israeli scientists find way to combat forged DNA

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Police forensic team is seen at a recent scene of shooting in a western German town. Israeli scientists have developed new technology to fight biological identity theft after realising that DNA evidence found at crime scenes can be easily falsified.

Israeli scientists have developed new technology to fight biological identity theft after realising that DNA evidence found at crime scenes can be easily falsified.

The researchers showed that with the use of basic equipment and know-how, anyone can obtain artificial DNA that can be incorporated into genuine human blood or saliva, or directly planted at a crime scene.

"Current forensic procedure fails to distinguish between such samples of blood, saliva and touched surfaces with artificial DNA," the scientists wrote in an article recently published by "[Forensic Science](#) International:

Genetics," a scientific journal.

Elon Ganor is CEO and co-founder of Nucleix, an Israeli company specialised in [DNA analysis](#) that conducted the research. She says it doesn't take much to produce large quantities of artificial DNA.

"You can take a used cup of coffee or a cigarette butt, send it to a laboratory, and for a relatively small sum of money have their DNA identified, produced and sent back to you in a test tube," he told AFP on Wednesday.

The DNA samples, which are produced using a standard technique called whole genome amplification, can then be planted at a crime scene.

Researchers at Nucleix also demonstrated how one could implant DNA into real blood by using a centrifuge to separate red and [white blood cells](#) and placing the DNA in the former, giving the blood a new profile.

As part of the experiment, a sample of the modified blood was sent to a laboratory in the United States that works with FBI forensic teams, which failed to catch the forgery, Ganor said.

To combat the practice, Nucleix has developed a DNA authentication method that distinguishes between real and fake samples.

"We have come up with a solution that should become an integral part of the standard DNA tests today and seal the hole that has been opened in what has become the gold-standard in forensics," said Ganor.

The new process was tested on natural and artificial samples of blood, saliva and touched surfaces, with complete success, Nucleix said.

It also identifies "contaminated" DNA that has been mixed with two or

more samples.

Forensic DNA profiling is today one of the most powerful tools applied on crime scenes, and is often used to convict or acquit suspects in rape and murder cases.

Although most of the DNA sequence is identical in all humans, forensic scientists scan 18 regions on the sequence that vary from person to person, allowing the identification of a single person with extremely high accuracy.

"DNA is in many cases what breaks trial suspects and allows their conviction 'beyond reasonable doubt,'" said DNA analysis expert Adam Friedmann, dean of the Marine Science School at Israel's Ruppin Academic Centre.

"DNA profiling is an excellent technique that is improving by leaps and bounds," he said.

"There is nearly a 100 percent accuracy in identification," he said, adding that there is less and less need to bring other evidence linking a person to a [crime scene](#).

"Courts in Israel, the United States and elsewhere are relying more and more on DNA forensic evidence to close cases," according to Friedmann.

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