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Fraud attempt in a paternity test modifies action protocol in DNA tests

This release is available in Spanish.

Dr. Lorente Acosta
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Researchers from all over the world have been carrying out paternity tests regularly. Samples are usually collected from mouth and saliva cells to carry out the DNA analysis.

The team of Dr **José Antonio Lorente Acosta** (director of the Laboratory of Genetic Identification of the University of Granada) carries out these forensic studies commissioned by the court in cases of paternity tests, for the identification of possible criminals or to carry out DNA databases (such as in the case of missing relatives).

The detection of a fraud attempts in a paternity test case in 2007 is changing the action protocol of forensic teams in similar cases. The team of Dr Lorente encountered a strange case: "the saliva analysis (epithelial cells from the interior of mouth) collected from a person undergoing a paternity test gave an incongruous result, a DNA which could not come from the man who had carried out the test".

The revision of the case revealed that they had followed the usual procedure: the suspect washed his mouth and after that they took the samples with a cotton swab. "After repeating the analysis, there was an only one possible conclusion: In the mouth of that man there was DNA from two different persons". After dismissing other possibilities, the question was: how was it possible" "We arranged to meet the person in question, we showed him the result and we explained him that we suspected that he had manipulated the samples which, as it was a trial in judicial investigation, could bring him serious consequences. Faced wit the evidence, he admitted that, shortly before the sample taking, he put into his mouth some saliva he kept in a little container".

It was n attempt to evade the responsibility in a case of extramarital paternity demand, and "he admitted that, when he mixed his saliva with someone else's, he attempted to "mislead" the experts in forensic genetics and, through them, the judge. After repeating the test it was revealed (with a probability of more than 99, 999998%) that he was the biological father in that case of judicial investigation".

Consequences

The referred case gains a special importance as this is the first time it has been described that someone has mixed two types of saliva in order to alter a DNA test; manipulation attempts in blood samples had been described before (with transfusions antes before the sample taking, for example).

"We must highlight –points out Lorente- that the alteration of DNA tests is almost impossible without forensic experts realizing it, but this case aroused the interest of the scientific community after its publication in the journal of the *American Academy of Forensic Sciences*. The reason is obvious: It raises the need of adopting special measures to prevent experts' error leading to crime or fraud or lack of punishment. From this publication, many protocols of saliva taking for forensic analysis (cases of paternity, crime suspects, and DNA databases) include the obligation for saliva donors to wash their mouth out with water before a witness, just before he places the swab in his mouth to collect saliva samples".

This case was studied by **FBI experts** (USA), interested in preventing possible manipulation attempts of the tests, and one of them, Dr Bruce Budowle, is co-author of the work.

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