



NUCLEIX RESEARCHERS DISCOVER DNA EVIDENCE MAY EASILY BE FALSIFIED

Company Develops New Detection Technology for Preventing Biological Identity Theft

TEL AVIV, Israel, August 17, 2009 — Nucleix, Ltd., an emerging life science company specializing in forensic DNA analysis, announced that company researchers have proven DNA evidence found at crime scenes can easily be falsified using basic equipment, know-how and access to DNA or a DNA database. Recognizing the need to safeguard the accuracy and credibility of DNA samples in the field of forensics, Nucleix scientists have developed a novel assay termed “DNA authentication” for combating this form of “biological identity theft” by distinguishing between *in-vivo* (real) and *in-vitro* (fake) DNA. These findings and new technology have also been published online in the forensic industry’s leading peer-reviewed scientific journal, *Forensic Science International: Genetics*. In a paper entitled, “Authentication of Forensic DNA Samples”¹ ([http://www.fsigenetics.com/article/S1872-4973\(09\)00099-4/abstract](http://www.fsigenetics.com/article/S1872-4973(09)00099-4/abstract)), Nucleix scientists demonstrate that while DNA fingerprinting is considered one of the leading forensic tools in many criminal investigations, DNA evidence can easily be falsified and planted at crime scenes prior to collection by law enforcement officers. The company has developed a state-of-the-art and scientifically-validated technology that can integrate DNA authentication into standard forensic procedure.

Use of DNA fingerprinting as evidence in criminal proceedings relies on the assumption that the DNA sample is genuine. However, standard molecular biology techniques, such as polymerase chain reaction (PCR), molecular cloning and more recently available whole genome amplification, enable anyone with basic equipment and limited know-how to synthesize unlimited amounts of artificial (*in-vitro*) DNA with any desired profile. Such fake DNA can easily be incorporated into genuine human tissues (e.g., blood, saliva) or applied to surfaces and planted at crime scenes. As reported in the paper, Nucleix’s research demonstrated that current forensic procedures cannot distinguish between real and fake DNA evidence. Moreover, Nucleix showed that *in vitro*-synthesized DNA samples that were profiled by a leading independent forensic laboratory were indistinguishable from *in vivo*-generated or real DNA.

According to Nucleix, *in vivo*-generated DNA contains loci that are completely and consistently methylated and other loci that are unmethylated, differing from *in vitro*-synthesized DNA, which is completely unmethylated. Nucleix’s novel proprietary assay can identify and differentiate between real and all potential types of fake DNA through methylation analysis of a set of genomic loci. Results of the company’s research demonstrated both the current risk in sample integrity and the success of Nucleix’s new approach to DNA source verification.

“DNA evidence has become the gold standard in forensic investigations and criminal justice in the last decade. We are deeply committed to applying our insights into DNA analysis and sample validation technology to ensure the highest level of accuracy and credibility for DNA evidence,” said Meirav Chovav, Vice President of Strategic Affairs and Board member. “Based on preliminary response to our research findings, we are working to make our proprietary assay available as soon as possible to the forensic science community.”

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“We believe that DNA authentication should become an integral part of the standard forensic procedure in order to assure genuine biological material has been evaluated,” said Elon Ganor, MD, Nucleix Chairman, Chief Executive Officer and co-founder. “The state-of-the-art DNA authentication technology that we developed can easily be integrated into the standard protocols currently performed in forensic laboratories to assure the authenticity of the DNA sample being genuine and not fabricated. From our research in the forensic sciences community, we believe that this application of our technology to prevent ‘biological identity theft’ may be just the tip of the iceberg when it comes to the potential for falsification of individual DNA.”

About Nucleix

Nucleix, an emerging life science company specializing in forensic DNA analysis, has developed a "DNA authentication" assay for forensic casework samples with potential applications across multiple DNA analysis and validation fields. DNA fingerprinting has been established as one of the most important forensic tools in criminal investigations. Nucleix scientists have demonstrated the viability of creating artificial DNA and “biological identity theft.”¹ Using basic equipment and know-how, DNA with any desired profile can be fabricated in the lab, and this artificial DNA can then be planted in crime scenes as fake evidence. Until recently, there has been no way to distinguish between genetic profiles obtained from falsified DNA samples, which can appear identical to real biological profiles based on current analytical protocols and technologies. Nucleix’s proprietary assays can distinguish between "fake" (*in-vitro* synthesized) DNA, and "real" (*in-vivo* generated) DNA. The company is committed to developing state-of-the-art "DNA authentication" assays that can be integrated into the standard forensic procedure, in order to maintain the high credibility of DNA evidence in the courtroom and other uses. For additional information on Nucleix, please visit the company’s website at <http://www.nucleix.com>.

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¹ D. Frumkin, et al., Authentication of forensic DNA samples, *Forensic Sci. Int. Genet.* (2009), doi:10.1016/j.fsigen.2009.06.009