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Development of the standard for the determination of genetic identity on the basis of the predetermined level of reliability of DNA identification

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Since the "absolute" criterion of the determination of genetic identity can not be, in casework there persists the problem of assessing the probability values. There are different approaches to its solving. Our concept supported by the elaborated detailed mathematical mechanism for its implementation aims to avoid subjectivity in deciding on identity. It is to adopt a conventional scientifically based threshold of identity and declare it as a standard for forensic experts and the court. The key point of the concept is that the choice of the criterion in question should be made on the basis of the adopted decision on what level of reliability of identification is acceptable to the domestic judicial system. The standard should be conservative and allow drawing a conclusion regardless of the factual background of the case. It is to be adopted by an authorized collegial body comprising: scientific experts (forensic DNA scientists, molecular and population geneticists, mathematicians) of whose competence is to calculate the risk of error depending on the probability values and to present the scale of risks in such a way that non-expert is able to understand their degree; specialists in the humanities who evaluate ethical and social aspects of these risks; authorized lawyers (representatives of law enforcement, judicial community, prosecution, advocacy) who assess the scale of the risks in legal and ethical framework and decide which level is most admissible for the justice system. While legal aspects are to be decided in domestic context, scientific aspects are common. The similar approach may be applicable to other forensics beyond DNA analysis.

Biography

Irina Perepechina is Professor of Department of Criminalistics of Legal faculty of Lomonosov Moscow State University. She has both medical and legal education, PhD degree (1990) and Doctor of Medicine degree (2003) in Forensic Medicine (genetic identification). Her scientific interests focus on fo¬rensic DNA analysis, DNA evidence interpretation, DNA database, DNA phenotyping, forensic serology; legal aspects, theory and methodology of forensic science/medical law. She has more than 120 scientific publications and manuals. She is a member of ISFG; in 1995-1999 - representative of Russian Federation in DNA WG of ENFSI. At the University, she lectures on forensic medicine, forensic genetics, criminalistics and forensic science.

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