NATIONAL COMMISSION FOR THE FORENSIC USE OF DNA

ACTIVITIES 2012

GOBIERNO DE ESPAÑA
MINISTERIO DE JUSTICIA

NATIONAL COMMISSION FOR THE FORENSIC USE OF DNA

ACTIVITIES 2012

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PRESENTATION

Scientific and technological progress in the field of DNA is developing at a tearing pace. The legal world, which always progresses more gradually, performing its mission of safeguarding the rights and freedoms of the individual, now needs to make additional efforts to incorporate this progress into legislation and its subsequent legal application.

The National Commission for the Forensic Use of DNA addresses these scientific, technical and legal aspects, working to balance and integrate them to harness their enormous value in such a wide range of areas.

The Commission has set up a Legal and Bioethics Working Group and a Technical Steering Committee consisting of recognised experts in their fields to address these scientific and technical issues. The co-ordinated work of these two groups enables the Commission to take a comprehensive and thorough approach to all questions and issues that may arise in applying legislation concerning DNA, seeking solutions that it will eventually set out in reports, proposals and recommendations.

However, the National Commission for the Forensic Use of DNA's remit goes further, as it is empowered to make legislative proposals based on scientific discoveries and technological developments.

This has governed much of the Commission's work this year, promoting scientific progress, whilst safeguarding the legal rights of those affected by issues of serious social importance, such as irregular adoptions and the abduction of new-born children.

In addition to its primary functions (accreditation of laboratories and preparation of scientific, technical and legal reports), the Commission has also made a number of highly significant proposals for legislative changes impacting directly on the effectiveness of investigations, the prosecution of crimes and identification of bodies.

DNA is now firmly established as a key form of evidence that is fundamental to forensic work. However, the Commission's work continues to reveal new challenges in meeting social demands and contributing to the functions of the Justice Administration.

Therefore, it gives me great pleasure to present this report into the activities of the National Commission for the Forensic Use of DNA. As you will appreciate, this year's work has been both intense and fascinating, as it should be given the scope of this issue, and the open-minded efforts and open, deep and reflective consideration of the experts and contributors involved in the working groups. I would like to pass on my most sincere thanks and congratulations to everyone involved in this work.

THE CHAIRMAN OF THE COMMISSION

Ricardo Conde Díez

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1. NATIONAL COMMISSION FOR THE FORENSIC USE OF DNA

1.1. INTRODUCTION

In addition to the annual accreditation of laboratories, in 2012 the Commission continued working closely with the Ministry of Justice on irregular adoptions and the abduction of newborn children, reporting on consent forms for taking samples and preparing recommendations on genetic identification studies.

The following activities were also noteworthy because of the effort involved and the excellent results obtained:

- On the part of the Legal and Bioethics Group: the proposed reforms of the Criminal Proceedings Act and Organic Law 10/2007, of 8 October, regulating the police DNA identification database, covering aspects such as the collection of samples, DNA analysis and profiling, accredited laboratories, registration of genetic profiles and the search for family members, whilst ensuring the necessary safeguards for the public.
- On the part of the Scientific Group: Award of the European IDNADEX and NETDNAMATCH projects for improving the discriminatory powers of DNA and managing DNA database matches.

1.2. COMPOSITION

The National Commission for the Forensic Use of DNA acts in plenary session or through the Technical Steering Committee.

The **plenary session** comprises a chairperson, who will be the head of the Department for Relations with the Justice Administration, two deputy chairs, who will be the director of the National Institute of Toxicology and Forensic Sciences and a representative from the office of the Spanish Secretary of State for Security, designated by the head of that department, and, as voting members, a judge, a public prosecutor, representatives from the National Institute of Toxicology and Forensic Sciences, the Spanish forensic police service, the criminal investigation department of the Spanish Civil Guard and the police forces of the autonomous regions that have DNA laboratories integrated into the police database on identifiers obtained from DNA, as well as experts on bioethics and genetics.

The plenary session will meet at least once every three months or when the performance of its functions requires it do so.

The **Technical Steering Committee** will be chaired by the director of the National Institute of Toxicology and Forensic Sciences and will be made up of representatives from the laboratories of the security forces, and a representative of the Institute, who will act as secretary.

For greater effectiveness and agility in its activity, the agreement setting forth the Commission's operating rules contemplated the creation of different working groups to focus on different issues. At present, the scientific-technical group, the DNA database organisation and management group and the legal and bioethics group have been set up.

Given the scientific and technical nature of the first two groups, as well as the interrelation between the two areas, these two groups act jointly and are integrated into the Technical Steering Committee, chaired by the director of the National Institute of Toxicology and Forensic Sciences, while the legal and bioethics group acts independently, with the support of a co-ordinator who holds the office of secretary and acts as liaison between the Technical Steering Committee and the plenary session.

Since the material scope of the National Commission for the Forensic Use of DNA is complex, within its scientific and technical specialisms, as well as the members referred to above the possibility is established of collaborating with and being advised by individuals attached to laboratories that analyse DNA for the purposes of investigating crimes and identifying missing persons, as well as those working with DNA databases.

MEMBERS OF THE PLENARY SESSION OF THE NATIONAL COMMISSION FOR THE FORENSIC USE OF DNA

CHAIR
Ricardo G. Conde Díez
Director General for Relations with the Justice Administration

DEPUTY CHAIRS
Gloria Vallejo de Torres
Director of the National Institute of Toxicology and Forensic Sciences

Manuel Quintanar Díez
Member, advisor at the Ministry of the Interior

SECRETARY MEMBER
Antonio Alonso Alonso
Doctor with the Biology Service of the Madrid department of the National Institute of Toxicology and Forensic Sciences

MEMBERS
SENIOR JUDGE
Ignacio Acón Ortego
Senior Judge

ALTERNATE SENIOR JUDGE
Jaime Requena Juliani
Senior Judge

PUBLIC PROSECUTOR
Ana Murillo Tapia
Public prosecutor

ALTERNATE PUBLIC PROSECUTOR
Mª Paz Ramírez Blanco
Public prosecutor

BIOETHICS EXPERT
María Casado González
Lecturer in Legal Philosophy, University of Barcelona

ALTERNATE BIOETHICS EXPERT
Ana Victoria Sánchez Urrutia
Lecturer in Constitutional Law, University of Barcelona

GENETICS EXPERT
Pilar Madero
Managing Director Centre for Genetic Analysis

DEPUTISING GENETICS EXPERT
Rafael Camacho
Spanish Foundation for Science and Technology

EXPERT ON MEDICAL GENETICS AND MOLECULAR PATHOLOGY WITH THE NATIONAL HEALTH SYSTEM MEMBER
José Antonio Lorente Acosta
Genetic Identification Laboratory. University of Granada

EXPERT ON MEDICAL GENETICS AND MOLECULAR PATHOLOGY WITH THE NATIONAL HEALTH SYSTEM ALTERNATE
Ángel Carracedo Álvarez
Director of the University Institute of Legal Medicine of Santiago de Compostela

FORENSIC DOCTOR MEMBER
Carmen Conejero Guillén
Forensic doctor with the Toxicology Information Service of the National Institute of Toxicology and Forensic Sciences

ALTERNATE FORENSIC DOCTOR
Pilar Peña Enciso
Toxicology Information Service of the Madrid department of the National Institute of Toxicology and Forensic Sciences
(To May 2012)

Natalia Méndez Riera
Toxicology Information Service of the Madrid department of the National Institute of Toxicology and Forensic Sciences
(Since May 2012)

OFFICIAL ATTACHED TO THE LABORATORIES OF THE SPANISH FORENSIC POLICE SERVICE
María Pilar Allúe Blasco
Spanish Forensic Police Service

OFFICIAL OF THE CRIMINAL INVESTIGATION DEPARTMENT OF THE CIVIL GUARD
Luis Guijarro Olivares
Commander of the Criminology Service with the Spanish Forensic Police Service

REPRESENTATIVE OF THE ERTZAINTZA
José María Yurrebaso
Chief Inspector of the Ertzaintza Forensic Police Service

REPRESENTATIVE OF THE MOSSOS D´ESQUADRA
Mª Lourdes Puigbarraca
Head of the Forensic Police Division of Mossos d´Esquadra

1.3. FUNCTIONS

The National Commission for the Forensic Use of DNA (CNUFADN, for its Spanish acronym) has executive and advisory functions on matters within its competence. Among the former, the most important are those associated with laboratories, as well as procedural protocols with regard to samples.

Specifically, its remit includes:

- Accreditation of laboratories that are authorised to compare genetic profiles for investigating and prosecuting crimes, for identifying bodies and inquiries into missing persons; as well as assessing their compliance with standards and establishing the official quality controls which they must periodically undergo.
- Establishment of co-ordination criteria for the laboratories referred to in the previous section, as well as evaluation of all the scientific and technical, organisational and ethical and legal aspects that would ensure the correct performance of the laboratories that make up the police database on identifiers obtained from DNA.
- Drawing up and approving the official technical protocols on collecting, storing and analysing samples.
- Determining the security conditions for custody and establishing all measures needed to ensure strict confidentiality and storage of samples, analysis and the data thereby obtained, in accordance with the law.

In its advisory functions it may draw up proposals for the ministries of Justice and the Interior that are deemed necessary to investigate and prosecute crimes and identify bodies effectively.

As many of its activities comply with international criteria and standards, another of the Commission's functions is to maintain collaborative relations with organisations from other states responsible for DNA analysis for the purposes of investigating and prosecuting crimes, identifying body remains and inquiries into missing persons, notwithstanding the activities of the ministries of Justice and the Interior in connection with such matters.

In this same line of collaboration, agreements with other entities may be proposed to help with carrying out accreditation procedures, as well as to collaborate with laboratories not included in the police database on identifiers obtained from DNA.

Lastly, it draws up an annual report on its activities, to be sent to the ministries of Justice and the Interior, which draw up and approve the internal rules and procedures for performing the functions within its remit.

1.4. LOGISTICAL SUPPORT

Due to the essentially technical and scientific nature of the functions of the CNUFADN and given the experience and prestige of the National Institute of Toxicology and Forensic Sciences, which is a benchmark on forensic genetics matters, the Commission's file of activity is defined by Royal Decree 1977/2008. And hence the only additional provision of the aforementioned Royal Decree establishes that the Institute will provide the human and material means for the Commission to carry it its functions. This support allows periodic meetings of the working groups to be held at the Institute's headquarters in Las Rozas (Madrid), which were held periodically throughout 2012.

The National Institute of Toxicology and Forensic Sciences (INTCF) website, which currently hosts that of the Commission, has been integrated into the Justice Administration website, https://www.administraciondejusticia.gob.es/, which publishes the agreements and documents prepared and approved by the Plenary Session and other useful information relating to the Commission.

1.5. ACTIVITIES OF THE PLENARY SESSION

The CNUFADN Plenary Session approves agreements and decides on matters submitted to it by the Technical Steering Committee and the Legal and Bioethics Group.

Through its chair, it liaises with government bodies and bodies from the autonomous regions, as well as other public and private organisations with which it maintains contact on account of their expertise.

In 2012, the CNUFADN Plenary Session met on the following occasions, debating and approving issues that for the most part had been prepared for it by its working groups:

– **Session ten, 16 May 2012**, at which the Technical Steering Committee presented its recommendations report on genetic analysis in irregular adoptions and abduction of new-born children and the legal group presented a proposal for preparation of informed consent forms.

  As the Plenary Session also included new members, a summary of the resolutions agreed to date by the CNUFADN, together with ongoing and pending activities, was also presented:

  1. Ongoing activities:

  • European projects: IDNADEX Improving DNA Data Exchange (development and assessment of a system for analysing 21 DNA markers, including the DNA markers in the New European Standard and the CODIS-USA DNA markers) and the National Network for DNA Post-Match Information Exchange & Management.

  • Recommendations for genetic identification studies in cases of irregular adoptions and abduction of new-born children.

  • Expert report.

  • Interpretation guide for samples and mixtures with low DNA content.

  • Third national survey on accreditation and guaranteeing quality.

2. Pending activities:

- Measures to make the right to cancel DNA database entries effective.
- Inclusion of convicted offenders on the DNA database.
- Procedures for taking samples from minors and assessing the capacity of the minor.
- Other informed consent forms (victims, suspects, relatives).
- Family search report in criminal investigations.

– **Session eleven, 23 July 2012**, presentation of the results of the third national survey on accreditation and guaranteeing quality, and consent forms in cases of abduction of new-born children and approval of the 2011 activity report.

– **Session twelve, 11 December 2012**, presentation of the report on scientific aspects (types and applications) of the "family search" tool in criminal investigations by the Secretary of the Technical Steering Committee; the report on "family searches" in criminal investigations; the report on deleting profiles and legislative proposals for the Commission on reform of the Criminal Proceedings Act and proposed modification of Royal Decree 1977/2008, of 28 November, by the co-ordinator of the Legal and Bioethics Group.

Also reporting on publication of Order JUS/2146/2012, of 1 October, creating personal data files relating to potential abduction of new-born children.

2. LEGAL AND BIOETHICS GROUP

2.1. PLENARY CONSTITUTION AGREEMENT

At the establishing plenary session on 27 March 2009, it was proposed that the Commission, as well as the plenary session and the Technical Committee envisaged in Royal Decree (RD) 1977/2008 would be organised into three working groups, namely, regarding technical-scientific aspects, regarding organisational aspects and aspects to do with the management of the DNA database and regarding legal and bioethical aspects. The first two groups would form part of the Technical Steering Committee and the third would be an independent entity, being specifically regulated under the internal development regulations authorised by article 3.i. of Royal Decree 1977/2008.

The subsequent plenary session on 21 July 2009 passed the rules governing the Commission's internal regime and the functioning of the working groups, in article 1 of which the Commission was structured into the three working groups referred to above, incorporating the first two into the Technical Committee and establishing that the legal and bioethics group would be made up of a judge, a public prosecutor and an expert on bioethics as permanent members (article 2), along with any voting members that, on their own initiative, express an interest in collaborating or whose assistance is requested by the technical committee or by the co-ordinator of the legal and bioethics group, without prejudice to the collaboration and advice established in article 7 of the same Royal Decree, which refers to collaboration with individuals attached to different laboratories that analyse DNA for the purposes of criminal investigation or identifying missing persons, as well as those who work with DNA databases.

2.2. REGULATIONS

The internal regulations of the Legal and Bioethics Group were approved at the aforementioned Plenary Session on 21 July 2009. Some of the main aspects of these include:

Section 4 of article 2 stipulates that each member may appoint external advisers for carrying out their function, without these advisers acquiring any rights with regard to the Commission; the Commission must be notified of these appointments, for purposes of record.

The functions of the Legal and Bioethics Group are established in article 3.2 of the internal regime, which states that the function of the legal and bioethics working group is to assess the ethical and legal criteria to be taken into account in the functions described in the preceding section, especially in connection with sample-taking, the individual and types of crimes, the use of DNA profiles on databases and data retention and cancellation.

Article 4 stipulates that the legal and bioethics working group will designate a co-ordinator who will act as secretary to the group and will liaise with the Technical Steering Committee and the plenary session. They will also be given authority to establish preparatory relations with the leaders of organisations in other countries that hold responsibility in this field.

As regards the functioning of the group, article 5.1, paragraph 2, indicates that each group will meet as frequently as its members decide, according to the needs of its work. The person co-ordinating the group will notify its members of the meetings, including the agenda, at least ten days in advance, except when the co-ordinator thinks it is urgent, and they will keep a record of the decisions made. Agreements will be passed by a majority of its members. For everything that is not regulated by this agreement, the provisions of Title II, Chapter II of Law 30/1992 of 26 November, the Legal Regime of Public Authorities and Common Administrative Procedure Act will apply.

Finally, article 6 states that the groups will be supported by the National Institute of Toxicology and Forensic Sciences (INTCF), which will provide the human and material resources needed for them to perform their functions effectively. The agreement on the internal regime came into effect on 22 July 2009.

2.3. MEMBERS (CO-ORDINATOR, MEMBERS AND COLLABORATORS)

Therefore, the members of the Group are:

CO-ORDINATING MEMBER-GROUP SECRETARY
Ignacio Acón Ortego
Senior Judge

VOTING MEMBERS
Ana Murillo Tapia
Public Prosecutor

María Casado González
Lecturer in Legal Philosophy, University of Barcelona

Carmen Conejero Guillén
Forensic doctor with the National Institute of Toxicology and Forensic Sciences

MEMBER SECRETARY TO THE COMMISSION
Antonio Alonso Alonso
Doctor with the Biology Service of the Madrid department of the National Institute of Toxicology and Forensic Sciences

ALTERNATE MEMBERS
Jaime Requena Juliani
Senior Judge

María Paz Ramírez Blanco
Public Prosecutor

Ana Victoria Sánchez Urrutia
Lecturer in Constitutional Law at the University of Barcelona

ON BEHALF OF THE SECRETARY OF STATE FOR SECURITY AT THE MINISTRY OF THE INTERIOR
José Andradas Heranz
DNA Database Administrator

ON BEHALF OF THE POLICE LABORATORIES OF THE NATIONAL POLICE FORCE
Carmen Solís Ortega
Inspector General of the Forensic Police Department

Antonio del Amo
Inspector General of the Forensic Police Department

ON BEHALF OF THE POLICE LABORATORIES OF THE CIVIL GUARD
José Mª de las Cuevas Carretero
Civil Guard Judiciary Police

ON BEHALF OF THE LABORATORIES OF THE MOSSOS D´ESQUADRA
Silvia Planet Robles
Head of Criminal Affairs, Legal Department of the Police Department

ON BEHALF OF THE ERTZAINTZA LABORATORIES
Pascual Gallego Melero
Ertzaintza Forensic Police Force

EXTERNAL ADVISORS PROPOSED BY THE MEMBER MARÍA CASADO GONZÁLEZ
Margarita Guillén Vázquez
Judge and Lecturer at the University of Santiago de Compostela

2.4. GROUP ACTIVITY: DEBATES AND CONCLUSIONS

The most important issues dealt with by the Legal and Bioethics Group include:

a) Consent forms in cases of abduction of new-born children (Order JUS/2146/2012, of 1 October).

b) Legislative proposals for the Institutional Commission on reform of the Criminal Proceedings Act.

c) Proposed modification of Organic Law 10/2007, of 8 October, regulating the police database for DNA identifiers, to give the INTCF and all Autonomous Community Policy Forces access to the database.

2.4.1. CONSENT FORM IN CASES OF ABDUCTION OF NEW-BORN CHILDREN (ORDER JUS/2146/2012, OF 1 OCTOBER)

During this parliamentary term, the Ministry of Justice has developed a thorough administrative procedure for investigating and reporting on possible cases of irregular adoptions and abduction of new-born children, in co-ordination with all official bodies involved and with technical support from the INTCF.

The many measures implemented include the creation of a file of requests for administrative information from people affected by abduction of new-born children and the DNA profile file for persons affected, introduced by Order JUS/2146/2012, of 1 October (Official State Gazette, 10 October 2012). This Order also approved the official information request forms, designed to ensure that the people involved provide the technical and identification information needed to obtain the information and documentation collected, and for the data and reports needed for preparation of the INTCF report.

The CNUFADN took part in drawing up these request forms. The Legal and Bioethics Group examined the forms proposed by the Ministry of Justice, making observations with regard to the application of Organic Law 10/2007, of 8 October, on the precise meaning of the concept of “affected party” and making some technical corrections relating to use of DNA. The Ministry of Justice accepted these observations and the CNUFADN then approved the forms at its Plenary Session on 23 July 2012. In drawing up these forms, the Ministry of Justice also requested reports from the Spanish Data Protection Agency, the Ministerial Commission on Electronic Administration and the Technical Secretariat General of the Ministry of Justice.

2.4.2 LEGISLATIVE PROPOSAL TO THE INSTITUTIONAL COMMISSION FOR REFORM OF THE CRIMINAL PROCEEDINGS ACT

At its meeting on 2 March 2012, the Council of Ministers approved the Agreement creating an Institutional Commission to prepare a draft amendment to the Criminal Proceedings Act. Being aware of the importance of this reform, the CNUFADN decided to prepare a legislative proposal on those issues related to DNA in criminal investigation for submission to the Institutional Commission on Reform of the Criminal Proceedings Act. The proposal was drawn up by the Legal and Bioethics Group, and approved in Plenary Session of the Commission on 11 December 2012. This addressed the following issues:

1. Regulation of forensic use of DNA in the Criminal Proceedings Act

The current Criminal Proceedings Act (LECrim) lacks adequate provisions on DNA usage in criminal investigation. The revised law should therefore introduce detailed regulations of issues related to such investigations involving scientific genetic recognition and identification techniques. These, in turn, must comply with the provisions of Organic Law 10/2007, of 8 October, and the requirements and safeguards required by jurisprudence.

We will now discuss the main aspects of the basic approach proposed to the Institutional Commission.

2. Collection of biological samples and DNA testing

The regulations should cover the following basic content:

- Regulation of collection of biological samples within the standards for collection of evidence (the body of the crime).
- Collection of fingerprints and evidence requiring biological analysis must be performed by specialists.
- Provision for DNA testing of the samples collected.
- This analysis should be entrusted to duly accredited laboratories.
- The markers should only be tested for the exclusive purpose of providing genetic information on identification of the person and their sex.
- Registration of genetic profiles must be in accordance with the provisions of Organic Law 10/2007, of 8 October.
- The entire process must be overseen by judicial authorities.

3. Family searches in criminal investigations.

The new Criminal Proceedings Act must expressly regulate family searches on DNA databases.

The technical report prepared by the CNUFADN Technical Steering Committee concludes that criminal investigation involving family searches poses certain legal and bioethical problems. There is a chance that the results of a search for DNA matches might give rise to a set of innocent candidates, whose privacy and confidentiality might be affected, as a result of being investigated for merely being related to a suspect.

The report therefore concluded that family searches might be a valuable tool in identifying criminal indicators, but only once other routes of investigation have been exhausted, and with due guarantees to ensure that the rights of persons involved are not unduly affected. The CNUFADN therefore concluded that the LECrim should expressly include family searches as a legal investigation route. However, this should be subject to the following safeguards:

- This is only an investigative tool, and should not be regarded as conclusive proof of guilt.
- It should only be used in serious crimes (such as serial killings and violent crimes).
- Express authorisation is required from a judge or prosecutor.
- It should be used for evidence that has not revealed any matches on the database, and for cases in which all other avenues of investigation have been exhausted.

- The DNA profile of the evidence must be complete and there must be sufficient material for additional analysis.
- Autosomal STR matches must be backed up by Y-STR and/or mtDNA analysis.
- The probability of the match must be high.
- There must be a comprehensive review of the DNA and all other investigation data before the identity of compatible persons is disclosed and investigation of these persons begins.

4. Mass genetic analysis

Another possible avenue of research that the new LECrim needs to consider is mass DNA analysis. This involves genetic testing of a group of the population (whether closely or widely focused) in order to identify the person responsible for a criminal act by comparison with genetic samples obtained from the victim or the crime scene. The following requirements and safeguards are needed:

- This should be used exceptionally and subsidiary to the criminal investigation, when all other avenues of investigation have been exhausted.
- It should only be used for serious crimes.
- It requires express authorisation from a judge or prosecutor
- Agreement to give samples and for genetic analysis must always be voluntary and may never be coerced.
- The genetic profiles obtained may only be used in the specific investigation. They must be noted and registered independently for the investigation in question, and may not be cross-checked with the police DNA database. The records of these profiles should be destroyed when they are no longer needed for establishing the facts.
- A suitability report should be required in advance to define the group for analysis.

5. Cancellation of genetic profiles

Article 9 of Organic Law 10/2007, of 8 October, imposes a duty to destroy genetic profiles in certain circumstances. However, it is often not possible to go ahead with such destruction due to lack of knowledge or notification of the status of the case as provided for in law: i.e. cancellation of a criminal record, an acquittal, provisional dismissal or lapse.

Without prejudice to the appropriateness of developing mechanisms to facilitate automatic cancellation, it would be suitable to change the law to ensure that judicial rulings permitting cancellation of DNA profiles are reported immediately to the authorities responsible for the DNA profiles database. Therefore, the LECrim should include an obligation for Court Clerks to notify decisions requiring the cancellation of DNA profiles.

Whilst preparing this proposal, the Legal and Bioethics Group also studied possible regulations for taking DNA samples from the bodies of persons in custody, particularly with regard to whether it should be necessary for legal counsel to be present during the taking of such samples. As this is a complex issue, it was decided to undertake a more detailed discussion at future meetings of the Legal and Bioethics Group.

The CNUFADN Plenary Session submitted its legislative proposal to the Institutional Commission for Reform of the Criminal Proceedings Act, requesting permission to report once a draft text had been prepared and, in any event, prior to any bill affecting issues relating to forensic use of DNA.

2.4.3 PROPOSED MODIFICATION OF ORGANIC LAW 10/2007, 8 OCTOBER, REGULATING THE POLICE DNA IDENTIFICATION DATABASE, TO INCLUDE THE NATIONAL INSTITUTE OF TOXICOLOGY AND FORENSIC SCIENCE AND ALL AUTONOMOUS COMMUNITY POLICE FORCES ON THE LIST OF BODIES GRANTED ACCESS TO THE POLICE DATABASE

A modification was proposed to Article 7 of Organic Law 10/2007, of 8 October, in order to give the National Institute of Toxicology and Forensic Sciences (INTCF) and the Autonomous Community Policy Forces access to data held on the police DNA database (CODIS).

This change was considered to be both necessary and urgent. It was therefore submitted with the proposed legislative reform of the Criminal Proceedings Act, through a possible modification through additional provisions, without prejudice to future consideration of a more wide-ranging reform of said Organic Law (inclusion of convicted offenders, cancellation, etc.).

3. THE TECHNICAL STEERING COMMITTEE

The Technical Steering Committee (TSC) was set up within the National Commission for the Forensic Use of DNA, to propose criteria for scientific and technical research, as well as to propose criteria relating to the functions in article 3.a) to the National Commission concerning accreditation of laboratories and, in particular, establishing the accreditation systems and official quality controls which must be applied to laboratories that carry out DNA analyses and provide the police database on identifiers obtained from DNA with genetic profiles.

The Technical Steering Committee is chaired by the director of the National Institute of Toxicology and Forensic Sciences and is made up of representatives from the security forces laboratories and the DNA expert designated by the National Institute of Toxicology and Forensic Sciences, who will also act as secretary.

Also, the CNUFADN agreement which passes the internal regime and functioning of the working groups (approved at the plenary session of 21/07/2009) provides for the creation of three working groups that correspond to the Commission's three areas of activity: A working group on scientific and technical aspects; a working group on organisational aspects and aspects to do with the management of the DNA database; and a working group on legal and bioethical aspects.

As far as the first two groups are concerned, given their scientific and technical nature, as well as the high degree of overlap between their activities, it was considered appropriate for them to work together within the scope of the Technical Steering Committee.

The functions of the scientific-technical and organisation and DNA database management working group include everything relating to taking biological samples, accrediting laboratories, genetic markers and profiles and criteria for organisation and management, security and assessing the effectiveness of the DNA database, as well as collaborating with organisations from other countries responsible for DNA analysis for the purposes of investigating and prosecuting crimes, identifying body remains and inquiries into missing persons, according to the provisions of article 3. a), b), c), d) and e) of the Royal Decree which regulates the composition and functioning of the National Commission for the Forensic Use of DNA.

3.1. MEMBERS AND ACTIVITIES

FORENSIC POLICE SERVICE
Lourdes Prieto Solla
DNA Laboratory of the Forensic Police Service.

Carmen Solís Ortega
Chief Inspector of the National Police Force. Head of the Analytic Co-ordination Service of the SPS

CENTRAL CRIMINOLOGY LABORATORY OF THE CIVIL GUARD
Pedro Aldavero Piñeiro
Lieutenant Head of DNA Database Management in the Biology Department

José Antonio Cano Fernández
Captain, Technical Director of the Biology Department - DNA Laboratory

David Parra Pecharromán
Captain, Head of Research and Development in the Biology Department, DNA Laboratory

ERTZAINTZA FORENSIC POLICE UNIT
Oscar García Fernández
Expert doctor with the Forensic Genetics Division, Forensic Police Unit, Ertzaintza

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Josep Lluís Monasterio Moran
Sotsinspector Cap d'Unitat Central Laboratori Biològic

NATIONAL INSTITUTE OF TOXICOLOGY AND FORENSIC SCIENCES
Gloria Vallejo de Torres (Chair)
Director of the National Institute of Toxicology and Forensic Sciences

Antonio Alonso Alonso (Secretary)
Doctor with the Biology Service of the Madrid department of the National Institute of Toxicology and Forensic Sciences

Manuel Crespillo Márquez
Doctor with the Biology Service of the Barcelona department of the National Institute of Toxicology and Forensic Sciences

The delegates of the official laboratories represented on the Technical Steering Committee (TSC) held four work meetings at the headquarters of the National Institute of Toxicology in Las Rozas during the course of 2012, with four sets of minutes of the Technical Steering Committee being agreed as follows:

- Record dated 14/03/2012
- Record dated 18/06/2012
- Record dated 28/06/2012
- Record dated 23/10/2012

The most important matters considered by the TSC in 2012 were as follows:

- **Laboratory accreditation,** with the third national assessment of the quality and accreditation of forensic genetic laboratories, involving review of the certificates obtained in official proficiency testing (GHEP-ISFG and GEDNAP) and the accreditation scope and status of each laboratory under the ISO 17025 standard.
- **Recommendations on genetic identification studies for cases of irregular adoptions and abduction of new-born children.**
- **A technical report on family searches in criminal investigation.**
- **Preparation of recommendations on the assessment and interpretation of mixed DNA profiles.**
- **Award of the European IDNADEX and NETDNAMATCH projects** to improve the discriminatory power of DNA profiles and to manage DNA matches on the database.

3.2. THE THIRD ANNUAL ASSESSMENT OF THE QUALITY AND ACCREDITATION OF FORENSIC GENETIC LABORATORIES

In 2012, the Technical Steering Committee (TSC) issued the third annual request for documentation to ensure quality and accreditation, pursuant to:

- Article 8 of Royal Decree 1977/2008, of 28 November, regulating the assessment process for DNA analysis laboratories.
- The CNUFADN agreement on laboratory quality accreditation and control approved by the CNUFADN Plenary Session on 21/07/2009.
- The European Union Council Framework Decision 2009/905/JHA on accreditation of forensic service providers carrying out laboratory activities. http://eur-lex.europa.eu/LexUriServ/LexUriServ.douri=OJ:L:2009:322:0014:0016:ES:PDF

As in previous years, forensic genetic laboratories providing services to the Spanish government were requested to provide documentation of their areas of application, quality control certificates and their accreditation status, to assess compliance with the CNUFADN agreement on accreditation and quality control approved by the CNUFADN Plenary Session on 21/07/2009.

Documentation was received from **25 laboratories** (**17 public laboratories** and **8 private laboratories**), which was studied at two dedicated meetings of the TSC, at which the results obtained by the different laboratories in external quality control exercises in 2012 were examined, as well as their certifications of the state and scope of the accreditation issued by ENAC (Spanish national accreditation body).

In the case of public laboratories:

- 15 laboratories were compliant with the CNUFADN agreement
- 2 laboratories were not compliant with the CNUFADN agreement, having not undergone the accreditation process in accordance with the ISO 17025 standard.

In the case of private laboratories:

- 3 laboratories were compliant with the CNUFADN agreement (although restricted to certain applications in some cases)
- 5 laboratories were not compliant with the CNUFADN agreement, having not undergone the accreditation process in accordance with the ISO 17025 standard.

It was therefore proposed that the list of laboratories compliant with the CNUFADN agreement on accreditation and quality control during 2012 should be approved, issuing a certificate of compliance to these 18 laboratories.

The list of accredited laboratories in 2012 is set out in **APPENDIX I** and at https://www.administraciondejusticia.gob.es/paj/PA_WebApp_SGNTJ_NPAJ/descarga/Relacion_Laboratorios_Cumplimiento_Acuerdo_CNUFADN_2012.pdf?idFile=0a21ea71-e54d-4996-b52e-d4f8ea16b799

3.3. RECOMMENDATIONS ON GENETIC IDENTIFICATION IN CASES OF IRREGULAR ADOPTIONS AND ABDUCTION OF NEW-BORN CHILDREN

The TSC is aware of the technical difficulties involved in some genetic identification studies in cases of abduction of new-born children. As a result, it has prepared some general recommendations for ensuring the quality and reliability of genetic identification studies in cases of irregular adoptions and abduction of new-born children, involving searches for matches among living individuals using DNA databases and the genetic identification of the exhumed remains of new-born children. The recommendations cover the following points:

1. Selecting and obtaining reference samples.
2. Selecting and obtaining samples from exhumed cadavers of new-born children.
3. Genetic analysis and laboratory accreditation.

4. Searches and records on DNA databases.

5.interpretation criteria and communication of compatibilities.

These recommendations were approved by the CNUFADN Plenary Session on 16/05/2012. The full text of the recommendations is provided in APPENDIX II and on the CNUFADN website at https://www.administraciondejusticia.gob.es/paj/PA_WebApp_SGNTJ_NPAJ/descarga/Recomendaciones_sobre_identificacion_genetica_en_adopciones_irregulares_y_sustraccion_de_recien_nacidos.pdf?idFile=90430626-4d5e-4817-ab91-48cd4f12f71c

3.4. TECHNICAL REPORT ON FAMILY SEARCHES IN CRIMINAL INVESTIGATIONS

The TSC addressed the problem of direct and indirect family searches in criminal investigations and submitted a technical report to the CNUFADN Plenary Session, providing examples of application in actual cases and legislative experiences on this issue in different countries.

The following aspects of family searches were analysed:

Direct family searches: These can be defined as a search for the donor of anonymous criminal evidence registered on the national DNA database through comparison of the DNA profile from the evidence with the DNA profiles of convicted offenders using a family search algorithm rather than a full match (e.g. searching for a 50% match of alleles, as would be expected in a father/son relationship) or using haplotype markers that do not enable us to distinguish genetically between certain members of a family group.

Two examples of how such searches might be applied are:

- Searching the profile of an aborted foetus resulting from a sexual assault using a family search algorithm compatible with a father/son relationship (50% of shared alleles).
- Using Y chromosome STR markers (specific to the male but not capable of distinguishing genetically between family members from the same paternal line) to search the anonymous DNA profile from the forensic evidences against the DNA database of convicted sex offenders.

Given the degree of development of the new generation of autosomal STR and Y chromosome marker analysis systems (with very high powers of discrimination) both of these family search applications are valid instruments from a scientific viewpoint in identifying the perpetrators of serious crimes, such as sexual assaults.

Indirect family searches: These can be defined as searches for persons genetically related to the donor of the anonymous criminal evidence registered in the DNA database using a family search algorithm (candidate profiles compatible with the evidence: Fathers, sons, brothers,...) of the DNA profile of the evidence and the DNA profiles of convicted offenders stored on the database, as a potential tool for identifying the donor of the evidence.

However, criminal investigation using family searches, particularly indirect family searches, poses a number of legal and bioethical problems. It is possible that the results of such a DNA search will lead to investigation of innocent candidates, whose privacy and confidentiality could be affected by being subject to investigation merely because they are related to a suspect.

The CNUFADN Legal and Bioethics Group has therefore analysed this investigative tool, concluding that family searches can be a valuable way of identifying criminal evidence, providing that other avenues of investigation have been exhausted and they are used in such a way that they impact as little as possible on the rights of those involved.

3.5. PREPARATION OF RECOMMENDATIONS ON THE ASSESSMENT AND INTERPRETATION OF MIXED DNA PROFILES.

In 2012, the TSC also made progress in its discussion and preparation of general recommendations for the assessment and analysis of mixed autosomal DNA STR markers in forensic genetics, addressing the following aspects.

- Accreditation criteria and quality assurance measures.
- Recommendations on internal validation studies.
- Contamination prevention controls and characterisation of the drop-in effect
- Analysis and interpretation of mixed DNA profiles.
- Statistical assessment.
- Evaluation report.

The recommendation document is expected to be approved and published on the CNUFADN website in 2013.

3.6. AWARD OF TWO EUROPEAN PROJECTS TO IMPROVE THE DISCRIMINATORY POWERS OF DNA PROFILES AND MANAGEMENT OF DNA MATCHES IN THE DATABASE

In 2012, two projects were awarded to the laboratories represented in the TSC by the European Commission's Home Affairs Directorate as part of the "Prevention of and Fight against Crime" sub-programme under the "Security and Safeguarding Liberties" framework programme.
http://ec.europa.eu/dgs/home-affairs/financing/fundings/security-and-safeguarding-liberties/prevention-of-and-fight-against-crime/index_en.htm

These two projects are summarised below.

IDNADEX: Improving DNA Data Exchange

The validation of a system for analysing 21 DNA STR markers was proposed, including the DNA markers of the new European standard and the CODIS (USA) DNA markers. This is a technological development to improve the exchange of DNA data between the national DNA databases of the member states (10 million profiles in Europe, 200,000 profiles on the Spanish DNA database) and with the United States (CODIS).

An increase is sought in the number of STR markers comparable with the millions of STR profiles that already exist on DNA databases around the world (20 million profiles).

It implies an increase of various orders of magnitude in the discrimination power of DNA analysis in the following applications: Identification of traces of criminal interest, genetic identification on missing persons, identification of victims of major disasters, identification of victims in mass graves and various genetic kinship analyses.

The proposed design is easy to transfer in terms of technology, as it is based on the combination of DNA STR markers that have already been validated in development by the accredited manufacturing industry and, internally, by a large number of forensic genetics laboratories around the world.

National Network for DNA Match Information Exchange (NETDNAMATCH)

Development of a national network for exchanging and handling information about the DNA matches obtained on the database.

In Spain, the DNA database for the purposes of criminal investigation and the identification of missing persons uses the CODIS system, structured into a network of local servers (LDIS) managed by three state institutions and two institutions from the autonomous regions connected by means of the SARA network to the state server (SDIS), which is managed by the Secretary of State for Security in compliance with the provisions of Organic Law 10/2007, of 8 October, regulating the police database on identifiers obtained from DNA. The DNA profiles (associated with an anonymous identifying code and a laboratory code) are structured into different search indices and compared systematically on the state server.

When a match occurs between the DNA profiles of two samples (stain-stain or stain-reference sample), it is necessary to exchange the data of the case or matter and the personal data (in the case of reference samples) with the institutions involved, as well as technical data to validate the match in certain cases. Currently, this data sharing is carried out by filling in a form manually, which is sent via institutional email addresses, resulting in a heavy administrative burden and inadequate handling of the information.

The idea with this project is to automate the process of communicating and handling DNA matches obtained in the CODIS system by importing and exporting standardised files and reports between CODIS and LIMS and between the LIMS systems and those of the five institutions involved in the process (National Institute of Toxicology and Forensic Sciences, Forensic Police Service, Civil Guard, the Ertzaintza (Basque police force) and Mossos d'Esquadra (Catalan police force) using a high-security network, in accordance with the provisions of Organic Law 15/1999 of 13 December on the protection of personal data.

4. APPENDICES: APPROVED AGREEMENTS AND DOCUMENTS

4.1. APPENDIX I: LIST OF LABORATORIES COMPLIANT WITH THE CNUFADN AGREEMENT ON ACCREDITATION AND QUALITY CONTROL

- DNA Laboratory of the Forensic Police Service (Madrid).
- Regional DNA / Biology Laboratory of the Western Andalusia Police Headquarters (Seville).

- Regional DNA / Biology Laboratory of the Eastern Andalusia Police Headquarters (Granada).
- Regional DNA / Biology Laboratory of the Catalonia Regional Police Headquarters (Barcelona).
- Regional DNA Laboratory of the Valencia Police Headquarters (Valencia).
- Regional DNA Laboratory of the Galicia Police Headquarters (A Coruña).
- Civil Guard Criminology Service. Department of Biology (Madrid).
- Forensic Genetics Laboratory. Ertzaintza Forensic Police Unit. (Erandio, Vizcaya).
- Analysis Laboratory of the Forensic Police Division. Mossos d'Esquadra (Sabadell, Barcelona).
- National Institute of Toxicology and Forensic Sciences. Biology Service. Madrid Department.
- National Institute of Toxicology and Forensic Sciences. Biology Service. Barcelona Department.
- National Institute of Toxicology and Forensic Sciences. Biology Service. Seville Department.
- National Institute of Toxicology and Forensic Sciences. Biology Division. La Laguna Regional Office.
- Legal Medicine Institute. Forensic Genetics Service. University of Santiago de Compostela (A Coruña).
- Navarra de Servicios y Tecnologías, S.A. (NASERTIC) (Villaba, Navarra).
- Citogen S.L. (Zaragoza).
- Genomica S.A.U. (Madrid).
- Neodiagnostica S.L. (Lleida).

Approved in Madrid by the National Commission for the Forensic Use of DNA on

23 July 2012

4.2. APPENDIX II: RECOMMENDATIONS FOR GENETIC IDENTIFICATION IN CASES OF IRREGULAR ADOPTIONS AND ABDUCTION OF NEW-BORN CHILDREN

(Document approved by the Plenary Session of the National Commission for the Forensic Use of DNA on *16 May 2012)*

The purpose of this document is to set out general recommendations to ensure the quality and reliability of genetic identification in cases of irregular adoption and abduction of new-born children, both in searches for matches with living persons on DNA databases, and genetic analysis of exhumed remains of new-born children.

1. Selection and collection of reference samples

Samples should be selected and obtained in accordance with the provisions of the following scientific recommendations:

Recommendations for the collection and delivery of samples for purposes of genetic identification. The Spanish-Portuguese Language group of the International Society for Forensic Genetics (GHEP-ISFG). Madeira, 2 June 2002
http://www.gep-isfg.org/archivos/201301/Recogida%20de%20evidencias.pdf

Recommendations for the collection and delivery of samples for genetic identification in major catastrophes. The Spanish-Portuguese Language group of the International Society for Forensic Genetics (GHEP-ISFG). 20 July 2007

Royal Decree 32/2009, of 6 February 2009, approving the National Protocol on Forensic Medicine and Forensic Police action in events with multiple victims. (Official State Gazette 6 February 2009)
http://www.boe.es/boe/dias/2009/02/06/pdfs/BOE-A-2009-2029.pdf

Standards for the preparation and delivery of samples for analysis by the National Institute of Toxicology and Forensic Sciences JUS/1291/2010, of 13 May (Official State Gazette 19 May 2010).
http://www.boe.es/boe/dias/2010/05/19/pdfs/BOE-A-2010-8030.pdf

The most appropriate family members for identification of children adopted in irregular circumstances are, in order of priority: Both parents, a single parent plus another family member from the opposite line (e.g. the father and a maternal relative or the mother and a paternal relative), full brothers (2 or more is most appropriate), full sisters (2 or more is most appropriate), other family members sharing paternal or maternal lineages.

The sample for analysis must be accompanied by a form with the donor's identification details, the relationship of the donor to the person to be identified, the type of sample collected and details of the chain of custody. The form will also include an informed consent form containing at least the following, as established by the National Commission for the Forensic Use of DNA: (1) the nature of the DNA profiles; (2) use and allocation of the DNA profiles; (3) the laboratories accredited for performance of the analysis; (4) preservation of the samples; and (5) the rights to data cancellation, rectification and access.

2. Selection and collection of samples in exhumations of cadavers of new-born children

Given the technical complexity, exhumations of cadavers of new-born children should be carried out by the Legal Medicine Institute using adequate procedures to ensure the documentation, recovery and preservation of the remains. All remains should be recovered and sent for criminal analysis (skeletal remains, surgical dressings, hair, umbilical cord clamps, etc.) for

selection of the most appropriate for genetic analysis. Furthermore, the anthropological study of skeletal remains, and criminal study of hair, as appropriate, should be undertaken in all cases prior to genetic analysis.

3. Genetic Analysis and Laboratory Accreditation

In the event that reference samples are available from the parents (father and/or mother), the genetic analysis will first be based on the study of autosomal STR ("Short Tandem Repeats") markers, specifically the STR markers set out in the new European Union standard (established by European Council decision dated 30 November 2009 on the exchange of DNA analysis results (2009/C 296/01)), the US Justice Department's CODIS standard and other STRs validated for forensic purposes.

Where samples are only available from one parent, complementary analysis of additional autosomal STRs, Y Chromosome STRs (Y-STR), X Chromosome STRs (X-STR) or mitochondrial DNA (mtDNA), will also be required, depending on the case. In the case of full brother autosomal STR, Y-STR and mtDNA analysis will be performed. In the case of full sisters, autosomal STR and mtDNA analysis will be performed, together with X-STR analysis if this is considered necessary.

In the case of reference samples from family members sharing paternal or maternal lineage, Y-STR and mtDNA analysis will be carried out, respectively, together with autosomal STR and X-STR analysis, as appropriate.

In analysis of skeletal remains from exhumed cadavers of new-born children, in addition of autosomal STR markers, it is also recommended that mini-STRs, Y-STR and/or mtDNA markers should be used (including short mtDNA amplicons) when this is considered necessary given the condition of the DNA obtained and/or the type of reference sample for comparison. If necessary, other small polymorphisms (SNPs, Indels) may be analysed to corroborate or rule out parenthood.

Pursuant to CNUFADN's position on laboratory accreditation and quality control (Commission Plenary Session agreement of 21 July 2009), laboratories should be accredited by the ENAC (Spanish national accreditation body) under the EN ISO/IEC 17.025 standard, passing at least one annual external quality control, either: the DNA polymorphisms quality control from the Spanish-Portuguese group of the International Society for Forensic Genetics (GHEP-ISFG) or the DNA polymorphisms quality control from the German group of the International Society for Forensic Genetics (GEDNAP).

The extreme difficulty of such analysis resulting from the serious degradation and small number of DNA copies recoverable in exhumations of new-born children, means that it is highly recommended that the analysis be undertaken by forensic genetic laboratories with validated procedures for genetic analysis of skeletal and dental remains, with accreditation under the EN ISO/IEC 17.025 standard.

4. DNA database registry and search

The laboratories should comply with the provisions of Organic Law 15/1999, of 13 December, ensuring that records in DNA databases for human identification:

- Have been declared to the Data Protection Agency's General Data Protection Register.
- Are subject to high level of security.

The laboratories should also ensure that the DNA database search and administration systems are validated for forensic work to ensure the integrity of DNA data and the reliability of the algorithms used in searching for matches among family groups.

5. Compatibility interpretation and communication criteria.

It is recommended that, wherever possible, both parents should be used to increase the reliability of matches in database searches, given the high rate of partial profiles that can result from analysis of exhumed remains.

The statistical assessment of matches is carried out based on a Likelihood Ratio (LR) in accordance with the following recommendations of the ISFG's Paternity Testing Commission and DNA Commission:

ISFG: Recommendations on biostatistics in paternity testing
http://www.isfg.org/files/7e61d5197d8894216dfc00b97350196021a56484.fsigen_2007_isfg_pat_recomm.pdf

D**NA Commission of the International Society for Forensic Genetics (ISFG):** Recommendations regarding the role of forensic genetics for disaster victim identification (DVI)
http://www.isfg.org/files/726ff129fb1b493261d1ce8b306647a702995979_piis1872497306000032.pdf

Following the recommendations of the ISFG's DNA Commission on victim identification, database populations should be used that are appropriate for both autosomal and haplotype markers, subject to a minimum statistical threshold for reporting of compatible family groups, as set out in section 6 thereof.

If only one parent is available, and given that random matches could be obtained with genetically unrelated individuals, additional autosomal STR markers should also be studied, together with Y-STR, X-STR or mtDNA analysis, as appropriate.

In the event of combined analysis of different lineages, the likelihood ratio will be assessed independently and combined; depending on the number of family members, their pedigree and the value of the resulting indices, the possibility of obtaining additional reference samples from other family members should also be assessed.