The Spanish and Portuguese ISFG Working Group: Ten Years Coordinating DNA Typing In Spain, Portugal and Latin America

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THE BEGINNING: THE ISFG MEETING OF NEW ORLEANS (1989)

The first meeting of the Spanish and Portuguese Working Group of the International Society for Forensic Genetics[a] (SPWG-ISFG in English or GEP-ISFG in Spanish and Portuguese) took place during the 13th Congress of the ISFG held from October 19–21, 1989 in New Orleans. Other ISFG working groups include the English, German, French, Italian, Japanese, the standardization group EDNAP and the DNA Commission. Through these working groups, the ISFG has promoted collaboration among labs without idiomatic or cultural, and socio-economic barriers, who work within similar legal systems. Representatives from Spanish and Portuguese labs attended this first meeting where the imperative necessity of sharing our efforts to incorporate high quality standards in the still emerging DNA technology in Spain, Portugal and Latin America was apparent. Our first initiative was to develop a collaborative exercise on DNA Typing in 1992 (1), which became the Annual GEP-ISFG DNA Proficiency Test in 1995 (2).

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PRESENT OBJECTIVES

Other early objectives of this working group were to: 1) develop guidelines for a quality assurance/control program in forensic genetics, 2) compile DNA population data, 3) discuss statistical interpretation issues, and more recently, 4) manage legislation issues for DNA sampling and DNA databanks, and 5) implement forensic genetics education programs. Each topic is regularly reviewed by separate working groups who report back to the rest of the GEP-ISFG members during the Annual GEP-ISFG Conference. Some of these reports, including a link to the GEP-ISFG Nuclear DNA Database (http://www.ertzaintza.net/adn_nuclear), can be found on the GEP-ISFG web page (http://www.usc.es/gep-isfh).

Today the GEP-ISFG has 177 members from 66 forensic genetics laboratories in Spain (28 labs), Portugal (6 labs), Argentina (10 labs), Colombia (8 labs), Brazil (5 labs), Ecuador (1 lab), Costa Rica (2 labs), Venezuela (1 lab), Uruguay (3 labs) and Paraguay (1 lab).

COLLABORATIVE AND PROFICIENCY DNA TESTING PROGRAMS

The Annual GEP-ISFG DNA Proficiency Test is coordinated by the Quality Assurance Unit of the National Institute of Toxicology in Madrid (http://www.mju.es/toxicologia/intframe.html). In our experience, collaborative DNA testing is an appropriate opportunity not only to make progress in standardization, but also to address other technical and scientific issues. To favor this scientific interest, the Annual GEP-ISFG DNA Proficiency Test has tried to keep an equilibrium between the freedom of each laboratory to choose a particular strategy of analysis, and the guarantee of high quality DNA typing.

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Our last proficiency test (1999), from 2 European and 8 Latin American countries, focused mainly on manual or semiautomatic STR typing (46 labs), however VNTR/RFLP typing (6 labs), Y-STR typing (10 labs) and mitochondrial DNA typing (15 labs) were also tested. The results of the test were discussed during the last GEP-ISFG meeting held from June 2–5, 1999

in La Gomera, Canary Isles, Spain. The data obtained offered an objective view of the "state-of-the art" DNA standardization process in Spain, Portugal and Latin America.

A great number of these labs are now using STR markers included in the 13 CODIS core loci or in the 7–10 standard STR loci recommended by ENFSI. This high level of standardization has been greatly facilitated by recent developments in STR multiplex technology by Promega Corporation and PE Biosystems, the leading providers of forensic STR typing systems. The majority (88%) of the GEP-ISFG laboratories are currently using commercial STR multiplex typing kits.

In the near future we will continue to favor the confluence of DNA standards to achieve a desirable global DNA standardization model that allows for the harmonious development of criminal DNA databanks around the world.

NUCLEAR AND MITOCHONDRIAL DNA POPULATION DATABASES

Compilation, analysis and interpretation of DNA population data generated by GEP-ISFG labs have been carried out by two working groups: (1) The GEP-ISFG mtDNA Database and (2) The GEP-ISFG Nuclear DNA Database. The last report of the GEP-ISFG mtDNA Database (http://www.usc.es/gep-isfh) included an analysis of 738 samples from 9 labs. The recent GEP-ISFG Nuclear DNA Database web site (http://www.ertzaintza.net/adn_nuclear) is an interesting internet resource that offers allele frequency information from 58 loci, mainly VNTR and STR markers, in 55 different population groups in Spain, Portugal and Latin America. This year, a new working group for Y-STR population data compilation has been formed.

NEW WORKING GROUPS

Two new working groups were introduced during the 1999 GEP-ISFG Annual Conference: 1) The Forensic Genetics Education Working Group, focusing on coordinating and informing the existing specialized forensic DNA typing education and training programs in the different countries and 2) The DNA Sampling Working Group, whose objective is to develop guidelines for the collection, documentation and preservation of trace evidence and reference samples for DNA typing. A new Discussion Group on statistical interpretation issues was also proposed.

THE SPANISH PROJECT OF LAW FOR REGULATION OF DNA DATABANKS

During 1999, experts from five Spanish GEP-ISFG labs, coordinated by the Ministry of Justice, participated in the development of specific legislation on the use of DNA within the framework of the criminal justice system, including the establishment of a national DNA database. Three main recommendations were made by the GEP-ISFG: 1) development of legislation for the collection, documentation and preservation of trace evidence and reference samples for DNA typing, 2) development of a National Accreditation System that will ensure compliance with quality standards in forensic genetics and 3) creation of a National Agency of DNA Profiles with the participation of Spanish laboratories that generate DNA profiles in criminal cases. A preliminary law project has recently been published by the Spanish Ministry of Justice (http://www.mju.es).

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REFERENCES

1. Gomez, J. and Carracedo, A. (1996) Advances in Forensic Haemogenetics 6. Carracedo A, Brinkman B, and Bär W (eds). Springer, Berlin Heidelberg, pp. 695–699.
2. Gomez, J. *et al.* (1997) *Int. J. Leg. Med.* **110**, 273.

[a]The ISFG was called ISFH until 1999 when the original term Haemogenetics was replaced by Genetics to more precisely describe the wide range of samples and fields of applications (not only blood) in Forensic Genetics with the advent of DNA typing methods.