

"Strengthening quality assurance in forensic laboratories: performance of the accredited GHEP-ISFG proficiency test"



**ENFSI DNA WG MEETING
Warsaw, 26-29 2016**

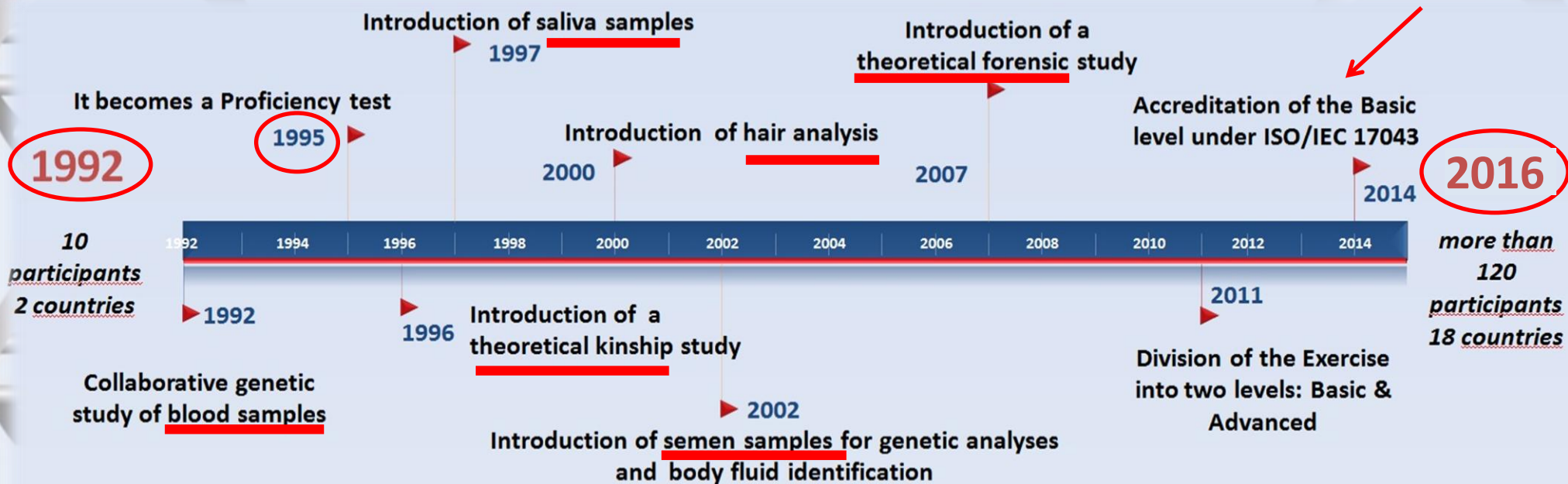
**Koro Fernández Oliva-Exercise Coordinator
Quality Assurance Service.**

**National Institute of Toxicology And Forensic Sciences.
Ministry of Justice
Madrid (SPAIN)**

Intercomparison Program

“Analysis of DNA polymorphisms in blood stains and other biological samples”

Proficiency Test (PT) Timeline



Steps Towards Accreditation

2008

- **National Commission for the Forensic Use of DNA (CNUFADN) in Spain**
- **Regulatory requirement**

2010

- **ISO/IEC 17043:2010 CONFORMITY ASSESSMENT. GENERAL REQUIREMENTS FOR PROFICIENCY TESTING**

2011

- **Basic Level**
- **Advanced Level**

2014

- **Accreditation under ISO/IEC 17043:2010**

Adjustments of the Basic level Exercise Skills

TECHNICAL

- Personnel
- Design of PT schemes
- **Communication with participants**
- **Assessment of the homogeneity of items**
- Review of Data analysis and evaluation
- **Development of suitable Reports**

MANAGEMENT

- Implementation of the ISO in the Management System
 - Proficiency test protocols
 - Management reviews
- Conduction of internal audits & external assessment
 - Organization Guidelines
- **Complaints and appeals management systems**

Accreditation under ISO/IEC 17043:2010

CONFORMITY ASSESSMENT. GENERAL REQUIREMENTS FOR PROFICIENCY TESTING.

ADDITIONAL INFORMATION

Forensic Science International: Genetics Supplement Series 5 (2015) e515–e517



Contents lists available at [ScienceDirect](#)

Forensic Science International: Genetics Supplement Series

journal homepage: www.elsevier.com/locate/FSIGSS



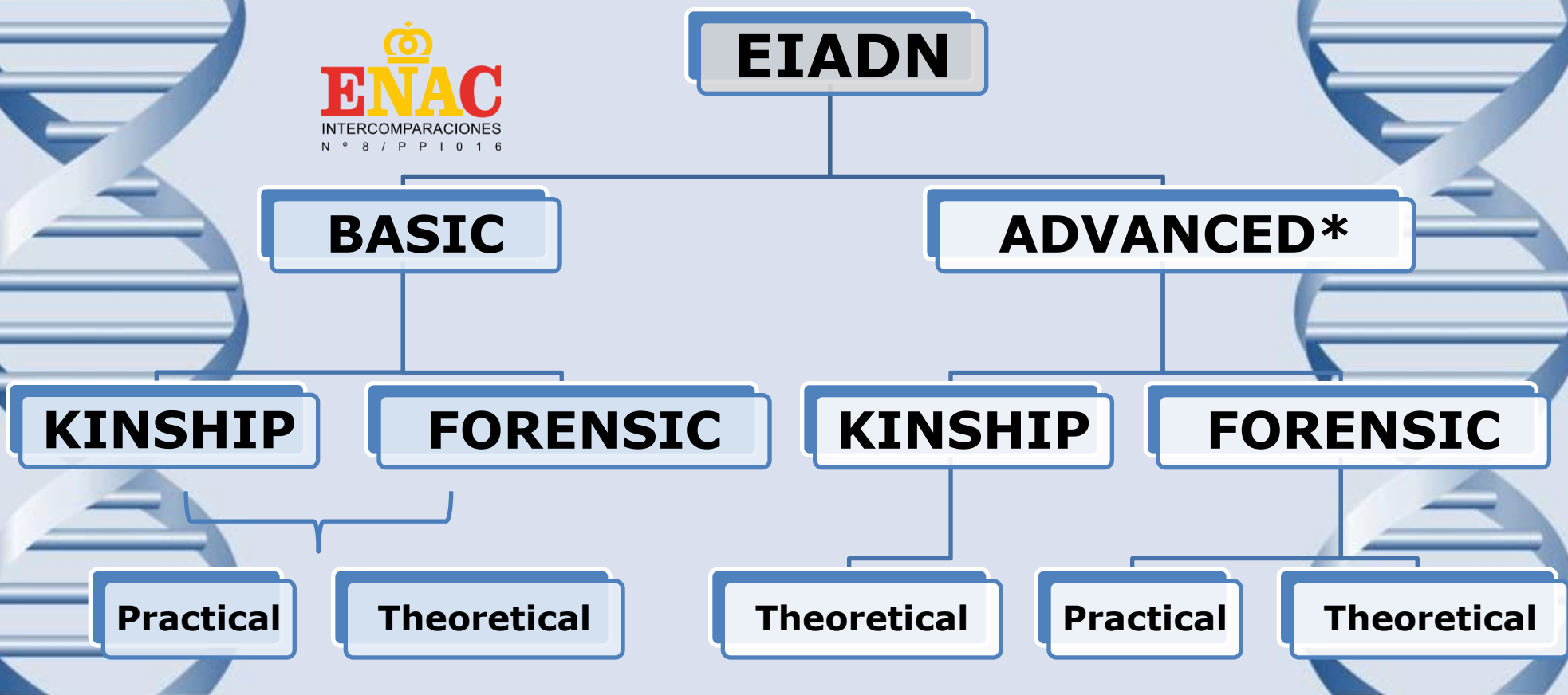
Accreditation of the GHEP-ISFG proficiency test: One step forward to assure and improve quality



K. Fernández*, J. Gómez, J. García-Hirschfeld, E. Cubillo, C. Sánchez de la Torre, G. Vallejo

National Institute of Toxicology and Forensic Sciences (INTCF), Ministry of Justice, Madrid, Spain

GHEP-ISFG Intercomparison Program overview



* This level is not under the scope of accreditation

BASIC LEVEL (practical)

Kinship module

Forensic module

BLOOD



SALIVA



SINGLE SOURCE OR MIXED STAINS: semen, saliva and/or blood



HAIR SHAFTS



▪Body fluid identification

▪Nuclear (autosomal STRs, Y-STRs & X-STRs) and mitochondrial DNA analysis

BASIC LEVEL(theoretical)

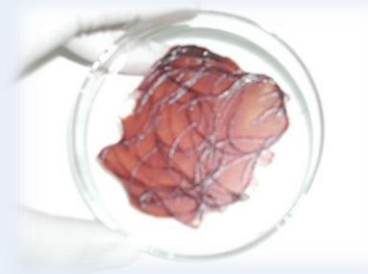
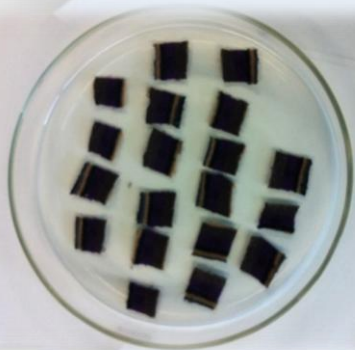
Kinship & Forensic Modules

➤ It implies statistical calculations of genotype frequencies, match probabilities, Paternity Indices (PI) or Likelihood ratios (LR) by the use of standardized and known formulas.

ADVANCED LEVEL (practical)

Forensic Module

**CHALLENGING
SINGLE SOURCE
OR MIXED STAINS
ONTO DIFFERENT
SUBSTRATES**



(Optional)



▪Body fluid identification

**▪Nuclear (autosomal STRs, Y-STRs & X-STRs)
and mitochondrial DNA analysis**

ADVANCED LEVEL(theoretical)

Kinship & Forensic Modules

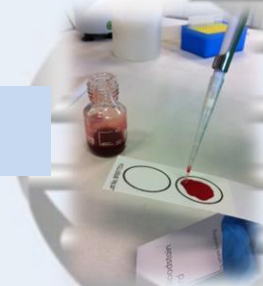
➤ Participants are asked to solve a proposed paper challenge, being included: mutations, silent alleles, complex mixtures, low level DNA...

QUALITY ASSURANCE

✓ **Contamination preventive procedures**





✓ **Maintenance of homogeneity**



✓ **Studies of the integrity & homogeneity**



REPORT (Spanish/English)

- 
- 
- **DESCRIPTION OF ITEMS**
 - **ASSIGNED VALUES**
 - **METHODOLOGY USED**
 - **INDIVIDUAL RESULTS**
 - **COMMENTS & RECOMMENDATIONS FROM THE ORGANIZATION**
 - **REMARKS AND SUGGESTIONS FROM THE PARTICIPANTS**

CERTIFICATES

A certificate of participation and results for each module (K & F) and level (B& A) is issued including evaluation of results regarding:

- **Nuclear STR (autosomal STRs, Y-SRTs, X-STRs)**
- **Mitochondrial DNA**
- **Body fluid identification**
- **Theoretical simulated forensic and paternity cases
(basic level)**
- **Contributors to the forensic item**
- **Identification of the non human item**

ADDITIONAL INFORMATION AT <http://ghep-isfg.org/>

The screenshot shows the GHEP-ISFG website. The header includes the logo, the text "The Spanish and Portuguese-Speaking Working Group of the International Society for Forensic Genetics", and navigation links for Information, Meetings, Proficiency Testing, Working Commissions, and Publications. A dropdown menu for Proficiency Testing is open, listing: Accredited scope (Basic Level), Participation Rules, Payment Procedure, Complain Form, Results of the GHEP PT 2015, Results of the GHEP PT 2014, Results of the GHEP-ISFG PT 2013, and Former Results. The main banner features a beach scene with palm trees and a boat, announcing the "XXI GHEP-ISFG Meeting" in Bayahíbe (Dominican Republic) on 4 and 5 September, 2016. It also mentions a workshop on September 6 titled "Familial testing, X-files and FamLinkX" by Leonor Gusmão, Nadia Pinto, and Thore Egeland. A blue callout box on the right lists simulated cases: -DVI, -mixtures, Genetic analysis, -INDELs, and -SPInDELs.

ghep-isfg

The Spanish and Portuguese-Speaking Working Group of the International Society for Forensic Genetics

Information Meetings **Proficiency Testing** Working Commissions Publications

Accredited scope (Basic Level)
Participation Rules
Payment Procedure
Complain Form
Results of the GHEP PT 2015
Results of the GHEP PT 2014
Results of the GHEP-ISFG PT 2013
Former Results

XXI GHEP-ISFG Meeting
Bayahíbe (Dominican Republic)
4 and 5 September, 2016
Workshop: September 6
"Familial testing, X-files and FamLinkX".
Leonor Gusmão, Nadia Pinto and Thore Egeland

➤ Simulated cases:
-DVI
-mixtures
➤ Genetic analysis
-INDELs
-SPInDELs

intcf.eiadn@justicia.es