

Animal Forensic Genetics Workshop

Organised by a Standing Committee: YES ~~NO~~

Meeting information

Date: Thursday, 6 July

Time: 11:00 – 13:00

Number of participants: 43 (forty-three)

Chair

Name: Guillermo Giovambattista

Affiliation: Institute of Veterinary Genetics (IGEVET; UNLP-CONICET); Faculty of Veterinary Sciences, National University of La Plata.

Contact email: guillermogiovambattista@gmail.com / ggiovam@fcv.unlp.edu.ar

Co-Chair (optional)

Name:

Affiliation:

Contact email:

Agenda

Animal Forensic Genetics (orals)	
Chair(s): Guillermo Giovambattista, Universidad Nacional De La Plata, Argentina	
Location: (no location assigned)	
Date & Time: Thursday, July 6, 11:00 AM - 1:00 PM	
11:00 AM	89213 Can DNA help trace the local trade of pangolins? Conservation genetics of white-bellied pangolins from the Dahomey Gap (West Africa). Stanislas Zanvo* ¹ , Chabi A.M.S Djagoun ¹ , Fortuné A. Azihou ¹ , Brice Sinsin ¹ , and Philippe Gaubert ² , ¹ Laboratory of Applied Ecology, University of Abomey-Calavi, Faculty of Agronomic Sciences, University of Abomey-Calavi, Cotonou, Benin, ² Laboratoire Evolution et Diversité Biologique, Université Paul Sabatier, Toulouse, France.
11:15 AM	89558 A new approach to the molecular differentiation of the wolf and the domestic dog in wildlife forensics. A.E. Hrebianchuk* ¹ and I.S. Tsybovsky ² , ¹ State Forensic Examination Committee of the Republic of Belarus, Minsk, Republic of Belarus, ² Republican unitary service enterprise «BelJurZabespechenne», Minsk, Republic of Belarus.
11:30 AM	89725 Identification of animal and plant species in Foodstuffs using Target GBS assay. Lucas Forlani, Diego Manuel Posik, Maria Cecilia Bruno, Leonidas Hernán Olinera, María Eugenia Zappa, Nadia Sabiela Castillo, Gisela Barbisan, Egle Etel Villegas Castagnasso, Julián Alejandro Crespi, Pilar Peral García, María Elena Fernandez, and Guillermo Giovambattista*, <i>Instituto de Genética Veterinaria (IGEvet)</i> , Facultad de Ciencias Veterinarias, Universidad Nacional de La Plata - CONICET, La Plata, Buenos Aires, Argentina.
11:45 PM	Results of 2022-2023 Comparison Test.
12:00 PM	Election of committee members.
12:30 PM	Design of the 2024-2025 CT. Other business.

Summary of the meeting

Dr. Guillermo Giovambattista (Chair) gave the introduction and welcomed the speakers. The three selected speakers for oral presentation, who also presented their posters at the conference, gave their oral presentations as detailed in the Workshop Agenda.



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Then, Dr George Sofronidis from Orivet gave the results of the 2022-2023 Animal Forensic Comparison Test, as detailed below:

- Twenty-three Labs required DNA samples to Duty lab and submitted results, maintaining the number of participant labs (18 labs in 2016-2017, 19 in 2018-2019 AFCT, and 23 in 2020-2021 AFCT).
- This CT included twenty-four dog samples for parentage analysis and genetic identification using STR markers: two control DNAs (CAN4 and CAN21), twenty unknown DNAs (including a deliberately contaminated sample -CAN10- and duplicate samples), one blood spotted onto filter card (CAN23) and other onto clothing (CAN24). The present CT was focused on a more realistic scenario. Sample DNA concentrations provided by Duty lab.
- Participant labs reported data for the 20 STR markers included in the report form, with a percent of consensus from 92.49% (REN105LO3) to 100%. One lab reported 18 additional markers, 6 genetic conditions, and 12 STRs.
- Most of the participants achieved rank 1, and no labs obtained Rank 4 or 5, showing the very good performance of the participants. Gender markers, reference, and CAN10 (mixed) samples were excluded to estimate relative and absolute performance.
- All labs reported results for CAN23 (Blood card) with only one genotyping error. In contrast, all labs reported results for CAN24 (Blood onto clothing), but 11 blank and 23 genotyping errors showed more difficulty in analyzing this type of sample. Eight labs reported the right results for CAN10 (mixed sample).
- Nine parentage and marker analysis questions were included in the report form. All the laboratories answered questions 1, 2, 6, and 7 correctly, while the correct answer for the remaining questions varied from 78.5% to 93%.

Design of the 2024-2025 Animal Forensic Comparison Test

Dr. George Sofronidis at Orivet (Australia) was nominated as the Duty Laboratory for the next CT.

Several issues were discussed about the design of the new Animal Forensic CT:

Specie. Include dog samples or other species again.

Include only parentage and genetic identification analysis or add Specie identification.

Include different types of samples (purified DNA, mixed samples, blood onto card, hair, etc.).

Include degraded and LCN DNA samples.

Discuss if the performance formula used for parentage CTs is appropriate for Animal forensic CT.

Dr. George Sofronidis proposed to continue moving the aim of the next CT to a more realistic Animal Forensic scenario, for example, includes a high percentage of samples (Blood, semen, DNA) onto different matrixes.

Dr. Sree Kanthaswamy proposed that If dog samples are included in the next comparison test, we must use the validated forensic PCR amplification kit panel and not the regular amplification kit. In this CT we are doing degraded and LCN DNA; therefore, he recommends using a validated kit for those samples. If labs want to use the regular kit, they should participate in the dog comparison test instead, and not the forensic one. We must keep the standard of forensic testing high even if only fewer labs participate. In addition, he suggested that the ISAG Animal Forensic Committee consider developing allelis ladders, so that animal forensic testing standards meet those of human standards.

Election of committee members:

The election of the members of the Standing Committee was performed. Two members left the committee (Dr. Torsten Brendel and Denise Aparecida Andrade de Oliveira), and two new members were nominated and elected (Clementina Rodellar Penella and Chesleigh Winfree).

Other business.

The Animal Genetics Editorial Board asked Dr. Sree Kanthaswamy to write a minireview on DNA-based forensic testing of wildlife to Animal Genetics for the journal. Dr. Kanthaswamy brought this up at the Animal Forensics Standing Committee meeting and proposed that this review be written collaboratively with other labs that perform wildlife forensics. This proposal was accepted, and we invited colleagues to work in Animal Forensic genetics.

Dr. Guillermo Giovambattista proposed to include a new section for the present case report during the next workshop.



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The new Standing Committee will move ahead with the proposed goals, including making the necessary arrangements to communicate these goals with the Society.

New Committee chair

Chair: Guillermo Giovambattista
Term of service <i>(add years of first and second term of service)</i> :
Affiliation: Institute of Veterinary Genetics (IGEVET; UNLP-CONICET); Faculty of Veterinary Sciences, National University of La Plata.
E-mail address: guillermogiovambattista@gmail.com / ggiovam@fcv.unlp.edu.ar

New Committee co-chair (optional)

Chair:
Term of service <i>(add years of first and second term of service)</i> :
Affiliation:
E-mail address:

Note: One term runs for two bi-annual conferences (i.e. four years)

New Committee members

Other committee members	First term of service (from year to year)	Second term of service (from year to year)	Email address
Leslie A. Lyons	2021-2025		Lyonsla@Missouri.edu

Rosina Fossati	2021-2025		fossati@genexa.com.uy
Sree Kanthaswamy	2021-2025		skanthaswamy@ucdavis.edu
Clementina Rodellar Penella	2023-2027		rodellar@unizar.es
Chesleigh Winfree	2023-2027		c.winfree@biopetlabs.com

COMPARISON TEST (2021-2023) YES ~~NO~~ (If no delete the rest of this page)

Duty laboratory

Contact person: George Sofronidis BSc
Affiliation: Orivet, St Kilda, Australia
E-mail address: george@orivet.com.au

Comments (issues rising)

No new issues rising were discussed.

List of recommended markers with primer information

Two alternative lists of dog STR markers were recommended. In addition, some laboratories used additional markers.
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Panel 1. Include the 19 STRs of the Thermo Scientific Canine Genotypes Panel 1.1 that corresponded with the ISAG dog core STRs for parentage and identification testing.

AHT121, AHT137, AHTh130, AHTh171, AHTh260, AHTk211, AHTk253, CXX0279, FH2054, FH2848, INRA021, INU005, INU030, INU055, K9-AME, REN105L03, REN162C04, REN169D01, REN169O18, REN247M23, REN54P11.

Panel 2. Include the 19 STR of the Thermo Scientific Canine Genotypes Panel 2.1

PEZ02, PEZ17, FH2017, FH2309, PEZ05, FH2001, FH2328, FH2004, FH2361, PEZ21, FH2054, FH3377, FH2107, FH2088, vWF.X, FH2010, PEZ16, FH3313 and ZFX/Y.

ISAG dog core STRs for parentage and identification testing.

Locus	5'-3' - Forward	5'-3' - Reverse
K9-AME	GTGCCAGCTCAGCAGCCCGTGGT	TCGGAGGCAGAGGTGGCTGTGGC
AHT121	TATTGCGAATGTCACCTGCTT	ATAGATACTCTCTCTCCG
AHT137	TACAGAGCTCTTAAGTGGTCC	CCTTGCAAAGTGTCTATTGCT
AHTh130	GTTTCTCTCCCTTCGGGTTT	GACGTGTGTTACGCCAG
AHTh171	AGGTGCAGAGCACTCACTCA	CCCATCCACAGTTCAGCTTT
AHTh260	CGCTATACCCACACCAGGAC	CCACAGAGGAAGGGATGC
AHTk211	TTAGCAGCCGAGAAATACGC	ATTCGCCCCACTTTGGCA
AHTk253	ACATTTGTGGGCATTGGGGCTG	TGCACATGGAGGACAAGCACGC
CXX0279	TGCTCAATGAAATAAGCCAGG	GGCGACCTTCATTCTCTGAC
FH2848	CAAAACCAACCCATCACTC	GTCAACAAGGACTTTTCTCTG
INRA021	ATGTAGTTGAGATTTCTCTACGG	TAATGGCTGATTTATTTGGTGG
INU005	CATGCTGGTTCTGTGTTAGGC	AAATACAATCTTGCCTGTGTGC
INU030	GGCTCCATGCTCAAGTCTGT	CATTGAAAGGGAATGCTGGT
INU055	CCAGGCGTCCCTATCCATCT	GCACCACTTTGGGCTCCTTC
REN105L03	GGAATCAAAAGCTGGCTCTCT	GAGATTGCTGCCCTTTTACC
REN162C04	TTCCCTTTGCTTTAGTAGGTTTTG	TGGCTGTATTCTTTGGCACA
REN169D01	AGTGGGTTTGCAAGTGAAC	AATAGCACATCTTCCCCACG
REN169O18	CACCAACCTGTCTGTTCTCT	ACTGTGTGAGCCAATCCCTT
REN247M23	TGGTAACACCAAGGCTTTCC	TGTCTTTTCCATGGTGGTGA
REN54P11	GGGGGAATTAACAAAGCCTGAG	TGCAAATTCTGAGCCCCACTG
REN64E19	TGGAGAGATGATATCCAAAAGGA	AGCCCACTGCTTGGTGTGAG


Duty laboratory for the next comparison test with contact details

Contact person: George Sofronidis BSc

Affiliation: Orivet, St Kilda, Australia

E-mail address: george@orivet.com.au

SIGNATURE



Chair

Dr. Guillermo Giovambattista

Duty laboratory (if applicable)

George Sofronidis BSc