



ISAG
CONFERENCE 2014, Xi'an, China

Camelid Genetics and Genomics Workshop

STANDING COMMITTEES / WORKSHOPS Information will be posted online

Organised by a standing committee **yes**

Date and meeting time: August 1, 2014, 10:15 – 11:30 am

Chair, name and contact email: Cecilia Penedo (Acting Chair), mctorrespenedo@ucdavis.edu

Agenda / programme:

- Welcome
- New Guidelines for Standing Committees and Comparison Tests
- Liability waiver from laboratories
- CT reporting changes under consideration
- 2013-2014 Comparison Test (Deanne, Cecilia)
- Recommended panel for OWCs (Cecilia)
- Need for CT in 2015-2016? Selection of Duty and Computer labs
- Comparison Test for 2016-2017? (change in conference years)
- Other business – merger with another group
- Election of new chair

Number of participants at meeting: 15

Summary of the meeting including votes, decisions taken and plans for future conferences
The workshop was chaired by Cecilia Penedo, standing for Eberhard Manz who could not attend conference. Among the attendees, 3 represented laboratories that participated in the comparison test. Information was given regarding draft documents on ISAG website regarding New Guidelines for Standing Committees, Guidelines for Comparison Tests and the Liability waiver. Institutional members were asked to have the Liability waiver reviewed by legal counsel of their institutions and provide feedback to Chair of SC and ISAG EC regarding acceptability of language and suggestions for revision. All laboratories participating in future tests will be required to sign the waiver. Information was also given about upcoming changes with increased assistance from FASS to comparison tests including compilation of CT results.

Comparison tests 2013-2014: Deanne Waine reported on the work as Duty Laboratory to provide 40 alpaca and 9 dromedary DNA samples to 14 laboratories. Reference genotypes were provided for one sample of each species. Cecilia Penedo reported on the work of the Computer Laboratory to compile results of 10 laboratories reporting results for alpacas and 6 laboratories reporting results for dromedaries.

The marker panels consisted of 14 core and 5 additional STRs for South American camelids (alpacas and llamas), 8 core and 5 additional STRs for Old World camels (dromedary

and Bactrian camel). Concordance among laboratories for the alpaca CT was very good with average accuracies of 96.4% (absolute) and 98.3% (relative), with 70% of the labs achieving rank 1 of absolute accuracy. Alpaca core marker performance averaged 98% and ranged from 90.6-100%. The STRs with highest disagreement were LCA66 (9.8%), LGU50 (7%), YWLL44 (2.3%), LCA56 (2.3%) and LCA99 (1.3%). Causes of disagreements were improper rounding of specific alleles in LCA66 and LCA99, missed alleles (YWLL44 and LCA56) and failure to recognize off-ladder alleles (LGU50, LCA66). Labs were encouraged to review own results and make adjustments to binning rules to correct these problems.

Absolute genotyping Accuracy Total # labs: 10 (Alpaca)		Relative genotyping Accuracy Total # labs: 10 (Alpaca)	
Rate	% Labs	Rate	% Labs
1: 100 – 98%	7	1: 100 – 98%	8
2: 98 – 95%	1	2: 98 – 95%	1
3: 95 – 90%	1	3: 95 – 90%	0
4: 90 – 80%	0	4: 90 – 80%	1
5: >80%	1	5: 80%	6

Regarding the dromedary comparison test, concordance among labs was also good, with 67% of the labs achieving rank 1 for absolute and relative accuracies.

Absolute genotyping Accuracy Total # labs: 6 (Dromedary)		Relative genotyping Accuracy Total # labs: 6 (Dromedary)	
Rate	% Labs	Rate	% Labs
1: 100 – 98%	4	1: 100 – 98%	4
2: 98 – 95%	1	2: 98 – 95%	2
3: 95 – 90%	0	3: 95 – 90%	0
4: 90 – 80%	0	4: 90 – 80%	0
5: >80%	1	5: 80%	0

OWC core marker performance averaged 98.7% and ranged from 94.4-100%. The STRs with highest disagreement were LCA37 (5.6%) and YWLL29 ((3.7%). Causes of disagreements were improper rounding of allele “210” in YWLL29 and failure to recognize an off-ladder allele “135” in LCA37. Labs were encouraged to review own results and make adjustments to binning rules to correct these problems.

Future comparison tests: Because of the low attendance, no decision was made about upcoming comparison tests. It was agreed that the chair of the SC would poll labs via email regarding need for another comparison test in 2016 and/or 2017.

Other business:

Merger with another group: The acting chair for the CGG attended a workshop for the working group “Pigeons, Regional Farmed Animals and Wild Animals” that met for the second time in Xian. The working group intended to request status as a standing committee. Considering that both this working group and the CGG have had limited attendance and that interests focus on non-traditional livestock and wildlife species, a proposal was made to consolidate the two groups and rename the workshop “Other Species of Economic Interest”. The merger would ensure that need for comparison tests for the different species of interest continue to be met and that a single workshop would provide a forum for continued scientific exchange. This information was presented at the CGG workshop; there was no opposing comment from participants. A letter will be sent to the ISAG Executive Committee to request the name change of the CGG.

Standing Committee Composition and Elections: The current CGG standing committee was chosen in 2012. The current chair (Eberhard Manz, Germany) communicated via email his decision to step down as Chair. Leanne van de Goor (The Netherlands) was elected by acclamation as the new Chair.

Committee members (the new committee)

Name	Fuction	Organization (E mail address)	Term of service
Leanne Van de Goor	Chair	VHL, The Netherlands (lgo@vhladmin.nl)	2014-19
Deanne Waine	Member	University of Queensland, Australia (d.waine@uq.edu.au)	2012-16
Cecilia Penedo	Member	University of California, Davis (mctorrespenedo@ucdavis.edu)	2012-16
Marcela Martinez	Member	Sociedad Rural Argentina mmartinez@sra.org.ar	2012-16
Belinda Appleton	Member	University of Melbourne, Australia (?) (?)	2012-16

COMPARISON TEST (2013-2014) yes

If yes: Number of enquiries – requests for consignment forms: 14
 Number of participants receiving samples: 14
 Number of samples: 40 alpaca and 9 dromedary
 Number of participants reporting results: 10 (alpaca) and 6 (dromedary)

Duty laboratory: Deanne Waine, d.waine@uq.edu.au
 Comments (issues rising) - None

Computing Laboratory: Cecilia Penedo, mctorrespenedo@ucdavis.edu
 Comments: None. All results received by deadline.

List of recommended markers with primer information

ISAG STR Panel - Llamas and Alpacas		
Locus	Forward	Reverse
LCA5	GTGGTTTTTGCCEAAGCTC	ACCTCCAGTCTGGGGATTTC
LCA8	GCTGAACCACAATGCAAAGA	AATGCAGATGTGCCTCAGTT
LCA19	TAAGTCCAGCCCCACACTCA	GGTGAAGGGGCTTGATCTTC
LCA24	ACTCACGGGTGACATACAGTG	GAGCAGTGTGGTTTGCATT
LCA37	AAACCTAATTACCTCCCCCA	CCATGTAGTTGCAGGACACG
LCA65	TTTTCCCCTGTGGTTGAAT	AACTCAGCTGTTGTCAGGGG
LCA66	GTGCAGCGTCCAAATAGTCA	CCAGCATCGTCCAGTATTCA
LCA94	GTCCATTCATCCAGCACAGG	ACATTTGGCAATCTCTGGAGAA
LCA99	CAGGTATCAGGAGACGGGCT	AGCATTTATCAAGGAACACCAGC
YWLL29	GAAGGCAGGAGAAAAGGTAG	CAGAGGCTTAATAACTTGCAG
YWLL40	CACATGACCATGTCCCCTTAT	CCAGTGACAGTGTGACTAAGA
YWLL44	CTCAACAATGCTAGACCTTGG	GAGAACACAGGCTGGTGAATA
LCA56	ATGGTGTTTACAGGGCGTTG	GCATTACTGAAAAGCCCAGG
LGU49	TCTAGGTCCATCCCTGTTGC	GTGCTGGAATAGTGCCAGT

Additional Markers - Llamas and Alpacas		
Locus	Forward	Reverse
LCA24	ACTCACGGGTGACATACAGTG	GAGCAGTGTGGTTTGCATT
YWLL08	ATCAAGTTTGAGGTGCTTTCC	CCATGGCATTGTGTTGAAGAC
YWLL36	AGTCTTGGTGTGGTGGTAGAA	TGCCAGGATACTGACAGTGAT
YWLL43 (X-linked)	ATACCTCTCTGCTCTCTCTC	CCTCTACAACCATGTTAGCCA
YWLL46	AAGCAGAGTGATTTAACCCTG	GGATGACTAAGACTGCTCTGA

STR Panel Recommended for Old World Camels**Core Panel for Comparison Test**

Locus	Forward	Reverse
LCA8	GCTGAACCACAATGCAAAGA	AATGCAGATGTGCCTCAGTT
LCA37	AAACCTAATTACCTCCCCCA	CCATGTAGTTGCAGGACACG
LCA56	ATGGTGTTTACAGGGCGTTG	GCATTACTGAAAAGCCCAGG
LCA65	TTTTTCCCCTGTGGTTGAAT	AACTCAGCTGTTGTCAGGGG
LCA66	GTGCAGCGTCCAAATAGTCA	CCAGCATCGTCCAGTATTCA
YWLL29	GAAGGCAGGAGAAAAGGTAG	CAGAGGCTTAATAACTTGACG
YWLL44	CTCAACAATGCTAGACCTTGG	GAGAACACAGGCTGGTGAATA

Additional markers-Old World Camels

Locus	Forward	Reverse
CVLR01	GAAGAGGTTGGGGCACTAC	CAGGCAGATATCCATTGAA
CVLR04	CCCTACCTCTGGACTTTG	CCTTTTTGGGTATTTTCAG
CVLR05	CCTTGGACCTCCTTGCTCTG	GCCACTGGTCCCTGTCATT
LCA99	CAGGTATCAGGAGACGGGCT	AGCATTATCAAGGAACACCAGC
LGU49	TCTAGGTCCATCCCTGTTGC	GTGCTGGAATAGTGCCAGT
VOLP3	AGACGGTTGGGAAGGTGGTA	CGACAGCAAGGCACAGGA
VOLP32	GTGATCGGAATGGCTTGAAG	CAGCGAGCACCTGAAAGAA
VOLP59	CCTTCCTCAGAATCCGCCACC	CCCGCGCACCAAGCAG
YWLL08	ATCAAGTTTGAGGTGCTTCC	CCATGGCATTGTGTTGAAGAC
YWLL36	AGTCTTGGTGTGGTGGTAGAA	TGCCAGGATACTGACAGTGAT


Duty laboratory for the next comparison test – to be decided via email.

Computing laboratory for the next comparison test – to be decided via email.

SIGNATURES


Chair(Acting)

Duty laboratory


Computing laboratory