



STANDARD OPERATING PROCEDURE

ICAR Accreditation of DNA Data Interpretation Centres

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PURPOSE

ICAR offers two separate areas in Accreditation for Organisations involved in DNA analysis and interpretation;

1. ICAR Accreditation of laboratories (so called wet labs) who analyse biomaterial to produce DNA Genotypes (DNA Data) and is described in ICAR SOP 05_CER_GNTX_0002.
2. ICAR Accreditation of DNA Data Interpretation Centres who take the DNA Data from the 'wet labs' in 1) above and interpret the data for a number of purposes as is described in this ICAR SOP 05_CER_GNTX_0003.

DNA Data Interpretation covered by this accreditation procedure includes applications for;

1. Parentage verification
2. Parentage discovery
3. Microsatellite imputation from SNPs (will not be part of the initial offering)
4. Animal identification verification.

For definitions see the 'Terms & Definitions' table below and for further technical background see ICAR Guidelines Section 4 – Guideline B.

SCOPE

This SOP concerns the Organisations involved in DNA analysis and interpretation, the DNA Working Group, the Interbull Centre, the ICAR Secretariat and Service-ICAR. Given that it is a commercial activity, it is also related to area 02_ADM (Admin/Finance).

TERMS & DEFINITIONS

Animal Identification verification: The process by which a DNA analysis of a tissue sample is used to determine if the sample can be excluded as originating from a particular animal.

DNA Data Handling and Interpretation Test: This is a prerequisite compliance test which each DNA Data Interpretation Centre Applicant has to pass before ICAR Accreditation can be



granted. ICAR's reference institute sends a predetermined set of SNPs to the Applicant with a series of accompanying animal and/or parentage analysis tasks to complete. The Applicant is asked to complete the interpretation tasks and return the required answers/results which are then assessed by ICAR's reference institute. Applicants must pass this assessment to gain Accreditation status.

ICAR accreditation: Formal Recognition by ICAR that an organisation has provided sufficient evidence that it has the competency, authority and experience to conduct DNA data interpretation for the purposes outlined in this Standard Operation procedure.

MAF : Minor allele frequency.

Microsatellite: Refer to definition of STR in this table.

Microsatellite imputation from SNPs: The process by which the microsatellite (STR) profiles of an animal may be imputed from SNP genotypes for the purpose of parentage verification.

Parentage discovery: The process by which a set of SNPs from an animal's genotype are compared to a database of SNP genotypes for older animals in order to identify the most likely sire and/or dam, if not already confirmed by Parentage Verification.

Parentage verification: The process by which the genotypes of the recorded parents (sire and/or dam) of an animal are examined relative to the genotype of the animal to determine if one or other does not qualify as a parent.

SI: Service ICAR

SNP: Single nucleotide polymorphism

SOP: Standard Operating Procedure in ICAR

STR: Abbreviation for short-tandem-repeat and commonly referred to as a microsatellite.

RESPONSIBILITIES

Services Executive: Administration of the Accreditation Applications in Service-ICAR for applicant DNA Data Interpretation Centres.

Administration Executive: Contractual and financial transactions between the Accredited DNA Data Interpretation Centres, the Interbull Centre and Service-ICAR.

Information Executive: Maintenance of ICAR web listing of Accredited DNA Data Interpretation Centres.

DNA Working Group (WG): Maintenance of Guidelines, policies as well as review and approval / rejection of Accreditation Applications (including design of the 'DNA Data Handling and Interpretation Test'.

Interbull Centre: Provide SNP database exchange and validation service for 'DNA Data Handling and Interpretation Test'.

PROCEDURE

The DNA Data Interpretation Centre Accreditation process comprises the following steps:

1. Application for accreditation.
2. Review of application.
3. Data handling and interpretation test
4. Granting of accreditation and on-going compliance monitoring.



1. Application

Organisations requesting DNA Data Interpretation Centre Accreditation from ICAR must apply by downloading, filling in and submitting the Application form and administration fee to ICAR. The Application form will be found in Annex V Guidelines Section 4 and must be filled out accurately and completely, providing necessary documentation as required, and submitted. ICAR must receive payment from Applicant before proceeding further with application.

2. Review of Application

The form will be evaluated by the Chair and/or nominated members of ICAR's DNA Working Group (WG). The DNA WG will review the application in line with criteria specified in the ICAR Guidelines, specifically in Section 4 Guideline B. If sanctioned by the DNA WG and the applicant has paid, ICAR will send the application documents to GenoEx@slu.se, which prompts the Interbull Centre to take action to start the next step of DNA Data Handling and Interpretation Testing.

3. DNA Data Handling and Interpretation Test

The DNA WG will define the DNA Data Handling and Interpretation Test protocol, quantity of SNPs, file exchange rules, pass/fail criteria, etc. This test itself will be outsourced to and coordinated by the Interbull Centre on behalf of Service ICAR. This test will be detailed as an Annex in our Guidelines. Interbull will liaise directly with the applicant with respect to sending them the test files and will inform ICAR the date when the data file has been sent to applicant.

4. Granting of accreditation and on-going monitoring

Interbull will inform ICAR of data file testing outcome (pass/fail).

In the case of rejection, ICAR advises that no resubmission is allowed within ninety days of the failed application. After the ninety days have elapsed then the Applicant is entitled to submit again.

In the case of a pass outcome, notice of the successful DNA Data Interpretation Centre Accreditation will be sent to the Organisation by ICAR and Interbull will be simultaneously cc'd to GenoEx@slu.se. The Organisation's name will be added to ICAR's Website listing of Accredited DNA Data Interpretation Centres and therewith becomes eligible to apply for GenoEx-PSE membership.

To ensure the ongoing compliance of Accredited DNA Data Interpretation Centres, ICAR's reference centre will send, every two years, a version of the DNA Data Handling and Interpretation Test to each Centre. The Centre will return test files and their results will be assessed and filed as a record of ongoing compliance.

To maintain its Accreditation status, the DNA Data Interpretation Centre must participate in and pass all ongoing DNA Data Handling and Interpretation Tests.

Service ICAR Fees for Accreditation of DNA Data Interpretation Centres

Application Fee: Service ICAR announced in Chile ICAR2016 that fees of €300 per application



to accompany each application (to be paid before testing can commence).

REFERENCE DOCUMENTS

Add links to documents

ICAR Guidelines Section 4 – Guideline B.

GenoEx-PSE Service Agreement

05_CER_GNTX_0002 - ICAR Accreditation of DNA Analysis Laboratories (Wet Labs)

DNA Working Group Terms of Reference

Application Form Annex V Guidelines Section 4