



ACTIVITY AREA REFERENCE DOCUMENT

CERTIFICATION SERVICES – GENETICS 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 in 2016)
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

Term	Definition
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'.