



# The British White Cattle Society of Australia Ltd

## Registration Process Summary (V4 18122023)

### 1. Tattoo or Double Brass Tag the animal's left (near side) ear (Regulation 10)

- Comprises Stud Prefix & unique number (sequential in order of birth, as practicable)

### 2. Do I need to Karyotype &/or Genotype the animal?

The following table provides a summary of where Karyotyping &/or Genotyping is required to register an animal:

<b>Minimal genotyping, parent verification and karyotyping required for registration of BW cattle</b>		
	<b>Dam and Sire known 60 chr</b>	<b>Dam and/or Sire 59, 58 or unknown chromosomes</b>
<b>AP</b>	Genotype and PV	Genotype and PV Karyotype - must be 60 chr for bull - AP females must have known Chr status
<b>A</b>	Genotype and PV	Karyotype optional <b>BUT</b> advised given AP offspring must have known Chr Status Genotype if karyotype 60 Genotype not obligatory if unkaryotyped or karyotype not 60 <b>BUT</b> advised as necessary to PV any AP offspring prior to registration
<b>B</b>	Genotype and PV	Karyotype Optional Genotype only if karyotype 60
<b>C</b>	Genotype and PV	Karyotype Optional Genotype only if karyotype 60

*Further details are included at Attachment 1*

### 3. Karyotype – If Required

- Blood sample sent to Cytolabs in Western Australia – use sodium or lithium heparin (no gel) vials
- Refer instructions on document titled “Cytogenic Testing of British White Cattle by Cytolabs WA” at **Attachment 2**.
- Ensure you contact Dr Hardy by email the week prior to sending the sample to confirm she is able to accept your sample(s)
- email the completed form to Cytolabs & copy [secretary@britishwhitecattleaustralia.com.au](mailto:secretary@britishwhitecattleaustralia.com.au)

### 4. Collect Tail Hair Samples If Required (For Genotyping – DNA Testing)

- Obtain Hair Cards from Manager Member Services
- Collect 20-30 hairs from tail switch (best from inner swirl section) which must:
  - be clean and dry - dirty hair samples will be rejected resulting delay and additional cost. Resubmitted samples must be on a new hair card.
  - contain root bulbs - pull hairs do not cut off
- Attach to Hair Card and complete the label on the Hair Card with: Your Name, Animal ID (Tattoo), Sign and Date (see instructions on reverse of the Hair Card).

### 5. Genotype Process

- Performed by Neogen on tail hair samples submitted with Neogen Form
- You must:
  - use the correct version of the form
  - complete the Application Form electronically (do not print and hand write details on the form)
  - email the completed form to Neogen & copy [secretary@britishwhitecattleaustralia.com.au](mailto:secretary@britishwhitecattleaustralia.com.au)
  - include a printed copy with the sample(s)



## The British White Cattle Society of Australia Ltd Registration Process Summary (v4 18122023)

- include the parent identifier (name or tattoo) AND the case number of the relevant parent with a PV request. If not supplied Neogen will not run the PV test.
- Additional tests such as Horn/Poll, Coat Colour, BVDV/Pestiviruses can be requested at additional cost
- Old or handwritten forms will be rejected and may result in a surcharge being applied
- Each sample received is assigned a new case number so an animal with multiple samples will have multiple case numbers please ensure you use the correct one(s).
- For test costs please refer to the Society's current pricing schedule.
- Test results will be emailed to you by the Manager Member Services once you have paid your testing charges invoice issued by the Society
- See **Attachments 3 & 4** for interpreting your results
- Retain your test results as you must send a copy with your Registration Form
- Include the case number(s) for each animal shown on the results in your own records as this # will be vital in future Genotyping of its offspring and for registration purposes

### 6. Registration (Regulation 14 & 20)

- Registrations are administered by the Australian Beef Research Institute (ABRI) for the Society
- Applications must be:
  - made within 18 months of the birth of the relevant animal or surcharges may apply
  - completed using the correct form
  - completed electronically (do not print & complete)
  - emailed to [secretary@britishwhitecattleaustralia.com.au](mailto:secretary@britishwhitecattleaustralia.com.au) together with Karyotype results & Geneotype results as applicable)
- An invoice for the registration charges will be sent to you & following payment, the Manager Member Services will forward the documents to ABRI for processing
- Certificates are issued as e copies and will be emailed to you by the Manager Member Services.

***If after reading these instructions and relevant Regulations you are unsure of anything please contact the Manager Member Services [secretary@britishwhitecattleaustralia.com](mailto:secretary@britishwhitecattleaustralia.com)***

*This is a summary of the registration process and requirements. Please refer to the specific documents noted under each item for more details.*



## **Attachment 1 – Genotyping and Karyotyping Background**

- Karyotyping and genotyping were introduced in response to the Society's decision to move to actively eradicating Robertsonian Translocation in the breed over time.
- Karyotyping confirms ("tests") an animal's chromosome status (ie 58, 59 or 60).
- Genotyping examines an animal's DNA sequence and allows confirmation of 60 status by inheritance ("derived") through a Parent Verification (PV) test.
- Animals cannot be registered as 60 without genotyping irrespective of the grade or sex of the animal (Reg. 14.1(m) & Reg. 14.1(n)).
- Only proven 60 Bulls can be registered, so to be registered all bulls must be genotyped. Karyotyping is only required where PV of 60 status is not possible (e.g. Dam was 59 or had unknown Chr. status) or cannot be confirmed (e.g. parent DNA profile not available/ascertainable).
- All AP females must have known chromosome status (either tested or derived) and be genotyped and PVD to be registered.
- Females of 58, 59 or unknown chromosome status of other grades are not required to be genotyped but may be at the option of the breeder/owner (noting that as all progeny will require karyotyping to be assigned 60 status there is little reason to do so).
- It is not mandatory to record the chromosome status of a A, B or C grade female on the Register, but for females of any grade to have their chromosome status recorded on the Register they must be Karyotyped unless they are from a known 60 sire and 60 Dam and parent verified as such.



## **Attachment 2 (Karyotype Process)**

### **CYTOGENETIC TESTING OF BRITISH WHITE CATTLE BY CYTOLABS. WA**

Cytogenetic testing of British White cattle is now only available through Cyto Labs Pty Ltd located in Perth, Western Australia. Cytolabs is an independent specialised cytogenetics laboratory providing human cytogenetic services. The principal, Dr Kathy Hardy, has kindly agreed to provide cytogenetic testing of samples from British White cattle for BWCSA members as this service is no longer available elsewhere in Australia. She specifically offers testing to determine the presence or absence of the Robertsonian Translocation.

#### **Arrangements for testing**

Dr Hardy is able to test up to four samples per week. Members need to co-ordinate the sending of samples so that no more than four samples arrive in any one week. Dr Hardy should be contacted by e-mail prior to the week of sending samples to ensure no other members are sending samples in the same week.

#### **Timing of Collection**

Samples need to arrive at Cytolabs before or on Friday. For this reason is safest to collect and dispatch on Monday or Tuesday and send by Express Post.

#### **Collection of samples**

Testing is carried out on venous blood samples. Collect 5-10mL of blood into a lithium heparin (green-topped) vacutainer (no gel). The preferred site is the neck although the tail vein is acceptable. The collection site should be cleaned with alcohol prior to collection. Keep samples refrigerated until dispatch.

#### **Labelling of samples**

Carefully label each sample with animal's full name, tattoo and date of birth.

#### **Packaging and dispatch of samples**

Samples should be carefully packed with bubble wrap or a freezer pack at 4 degrees Celsius. They must not be allowed to freeze. Good results are obtained when sent at room temperature.

Enclose a copy of the application form listing the animals sampled with their gender, tattoo and date of birth. It is useful to also include the Robertsonian translocation status (if known) of the animal's sire and dam.

Send packed samples by priority post to ensure they arrive in Perth by Friday. It is wise to confirm the dispatch of samples with an e-mail to Kathy Hardy.

#### **Results and Invoicing**

Results are usually available by the end of the following week via e-mail with a formal report sent out in the post. The formal report should be retained as proof of result and the test number on the report will be required for registration of the animal. A copy will also need to be provided to the BWCSA Secretary.

An invoice follows with the service being charged at a flat rate of \$150 per sample.

#### **Cytolab contact details**

Dr Kathy Hardy

Cytolabs

10 Capel Court

Bentley, Western Australia 6102 Tel: 08 93567222 Fax: 08 93567266

E-mail: [Kathy@cytolabs.com.au](mailto:Kathy@cytolabs.com.au) Website: [www.cytolabs.com.au](http://www.cytolabs.com.au)



Attachment 3 (Genotype Results Interpretation 1 – Coat, Horn/Poll, other)



**Neogen Australasia Test Key**

**General Results:**

N – Non-Carrier; DNA analysis is consistent with the subject NOT carrying the mutation tested  
 C – Carrier; DNA analysis is consistent with the subject CARRYING the mutation tested  
 A – Affected; DNA analysis is consistent with the subject carrying two copies of the mutation tested  
 NR – No Result

**Coat:**

ED - homozygous dominant black  
 ED/e - dominant black/recessive red  
 ED/ E+ - dominant black/wildtype  
 E+/e - wildtype/recessive red  
 E+/ E+ - homozygous wildtype  
 e/e - homozygous recessive red

**HornPoll:**

Result	Interpretation	Animal's Appearance
PcPc	Homozygous Poll (PP)	Predominately Polled (occasional scurs)
PcPf		
PfPf		
HPc	Heterozygous Poll (PH)	Polled or Scurred
HPf		
HH	Horned (HH)	Horned
NR	due failed test OR due to unresolved haplotype (combination of HornPoll markers fail to produce a valid result).	

**SCD:**

Results presented above reflect the allelic variation at a specific site in the SCD gene that changes the corresponding amino acid from Valine (V) to Alanine (A) which has a significant relationship to the melting point of fat in Wagyu, and hence enhances palatability. There are three possible genotypes for SCD, these are AA, AV and VV. AA is the preferred type

**TENDERNESS Key:**

Increase in “tenderness” is associated with favourable alleles seen within the selected marker panel. In this report, the combined genotype results have been scored between 1 to 10, where 10 has the most favourable number of alleles present.



# The British White Cattle Society of Australia Ltd Registration Process Summary (v4 18122023)

## Attachment 4 (Genotype Results Interpretation 2)



Excel based (csv) results key:

Column Label	Description
CASE-NUMBER:	Unique identifier assigned by NAA to sample and to be quoted if need retesting on that sample. (Can have multiple case numbers to an Animal, if more than 1 sample sent, but only ever 1 case number per sample).
IDENT	(NOTE: This is as on submission form which doesn't always marry up to official registration)
DNA-TESTS-REQUESTED:	As per submission
RESULT:	If Complete, this means the test is completed. Incomplete = pending or failed test.
SIRE-CASE-Q	The case number of single qualifying sire from nomination set. BLANK means no sire qualified/all excluded OR multiple qualifications = unresolved.
SIRE-IDENT-Q	The IDENT(see above) of single qualifying sire from nomination set. BLANK means no sire qualified/all excluded OR multiple qualifications = unresolved.
DAM-CASE-Q	The case number of single qualifying dam from nomination set. BLANK means no dam qualified/all excluded OR multiple qualifications =unresolved.
DAM-IDENT-Q	The IDENT(see above) of single qualifying dam from nomination set. BLANK means no dam qualified/all excluded OR multiple qualifications =unresolved.
MATING	Q designates a single qualification of both sire and dam. Blank means no Trio qualification
SIRES-EXCLUDED	Any sires (Idents listed) considered but rejected. NOTE: We often run sires in aggregate.
DAMS-EXCLUDED	Any dams (Idents listed) considered but rejected. NOTE: We often run dams in aggregate.
BIRTHDATE	Birth date of animal
SEX	Sex of animal
ANIM-NAME	Name of animal, optional
MEMB-ID	Member ID, optional