



Welcome to the *β*-Newsletter  
of the  
Miniature Horse Association of Australia Inc.

ABN 22 921 298 546  
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E-NEWS #73

5 June 2012

**Miniature Horse Association of Australia Inc.**

Dear Members,

Further to our E-News #72 regarding DNA, we list hereunder information on DNA Typing and Parentage testing. Also details of the procedure that Members can follow, along with just two of the labs that can be used: Members can use any lab they wish and we have included the information below as a guide and to assist Members.

Procedure to have DNA Testing done through MHAA / Australian Genetics Testing Pty Ltd, Qld:

1. Complete a Work Order, noting that DNA Testing is required and send to the office, along with the payment of \$87-50 for each Horse that is being tested  
Please note: Members do not need to complete a DNA/Parent Verification of Horses Form, these are now obsolete.
2. A Hair Kit will be sent to you from the MHAA office which will have full directions on how to take the hair sample, with it will be the appropriate paperwork, along with a self-addressed envelope to the Australian Genetics Testing Pty Ltd. All you have to do is follow the directions and post the sample.
3. The results will be sent to the MHAA Registrar, who will forward the results to the Member.

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Notes:

Australian Genetics Testing Pty Ltd only deal with Breed Registries and therefore Members cannot deal with them direct.

MHAA Charges Members the fee that is charged by Australian Genetics Testing Pty Ltd and do not receive any commission or added bonus for acting as an intermediary to assist Members.

All results are kept on file at the Australian Genetics Testing Laboratory, so that if you had DNA testing done with this lab and have mislaid the results, it is possible to obtain a copy of them. All you need to do is contact the MHAA Registrar, Helen Klingberg.

If Members have had testing done and advised the MHAA office, but it does not appear on the Registration Certificate of the Horse that has been tested: they should send in their Certificates, with a copy of the DNA results, to have the Certificate updated. If this is done before 1 August, 2012, there will be no charge. If sent in after that date, there will be an \$11-00 fee, unless there are other transactions taking place, i.e. upgrade, transfer etc.

If Members have any queries with regards to DNA testing please contact the MHAA Registrar, Helen Klingberg, [rosdayl@bigpond.com](mailto:rosdayl@bigpond.com) or phone 08 8562 2410 (evenings).

## Procedure to have DNA Testing done through Animal Genetics Inc, USA:

**DNA Typing and Parentage Testing:** Since 1992 Animal genetics and its avian division Avian Biotech International have tested over 1.5 million samples. Animal Genetics performs a wide range of assays including DNA typing, infectious disease screening, genetic disorders screening, coat colour identification and genetic sex identification. Our panel for Equine DNA Typing is based on the internationally accepted panel of microsatellite markers set up by the International Society for Animal Genetics (ISAG) and 11 additional industry used markers.

Our equine profiles can be compared with other labs using the international alphanumeric nomenclature.

Our panel of markers has an efficacy rate greater than 99.99% for detection of incorrectly assigned parentage. Our laboratories are staffed with highly experienced people who process thousands of DNA tests from the United States and around the world. Our crosschecking procedures for processing and recording ensure the highest level of accuracy and quality control.

**Equine DNA Profiling:** DNA profile, also referred to as genotyping or DNA Fingerprinting, creates a genetic code specific for each individual. Individuals inherit two sets of genes, one from each parent. A DNA profile is the inherited genetic information passed on by both parents to the offspring.

**Parentage Testing:** Parentage testing establishes the degree of relationship between the foal, and the suspected dam and sire. DNA parentage testing can determine with extreme accuracy who is, or is not the possible sire or dam of a foal. DNA profiling is the most accurate and reliable method for determining the parentage of any foal. Use our online parentage calculator to perform your own parentage verification.

**How do we do it?:** The principle bases for most parentage testing is 'exclusion'. An individual inherits one copy of each gene from each parent. When performing a DNA profile or genotype the idea is to compare a specific allele (fragment of DNA) of an individual with that of the dam and potential sire(s). Any alleles of DNA found in the foal, which are not present in the dam's DNA, are concluded to have come from the sire. An assay of equine-specific markers allows for a DNA profile unique to that individual horse. Each marker generates two alleles (bands) of a particular size. A genetic analyser (ABI-3100) accurately identifies all 20 different STR markers. When an allele is the same size, it is considered homozygous i.e. the foal has inherited two identical copies, one from each parent. Where the two bands appear as different sizes, the individual is considered heterozygous, i.e. the foal has inherited one specific sized allele from each parent. Results are shown as Confirmed or Excluded as well as all allele sizes are indicated. In cases of exclusion, all markers determining the point/s of exclusion are highlighted.

Cost        \$40.00 US for single DNA Profile.

              \$100.00 US for Parentage Verification (Both parents and offspring).

Sample Collection: Collect the sample by pulling (not cutting) 20-30 mane or tail hairs with roots attached. It is important that you pull the hairs and confirm that the actual root of the hair is being collected. The root contains the genetic material of your horse that is needed for DNA testing. Therefore, cut hairs do not provide an adequate sample of your horse. Place the collected hairs of each horse in a separate zip-lock bag or envelope labelling the bags accordingly with the horses name or identification number. Download and complete a submission form for each sample and send along with payment to Animal Genetics for testing.

#### National Committee of Management

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