

RWHA DNA Labs

Neogen Genomics - Single Nucleotide Polymorphism (SNP)

Parentage DNA testing allows you to accurately track your breeding by verifying the relationships between sires, dams, and offspring and helping you make strategic breeding and retention decisions to reach your growth goals. Our products and labs offer fast and efficient parentage testing across species using panels approved by ISAG and the USDA, so you can breed confidently and trust your pedigree records.

Single Nucleotide Polymorphism (SNP) technology genetically fingerprints each animal, guaranteeing you get precise results. As a leader in genomics, we've contributed to research supporting SNP-based parentage tests across species and transitioning to SNPs from Short Tandem Repeat (STR)-based technologies. SNP technology supports many of our parentage tests and can also provide additional data and identify targeted health and trait markers.

The parentage test will be 96 markers with access to our LIMS system to compare parentage.

<https://www.neogen.com/solutions/parentage>

UC Davis Veterinary Genetics Laboratory - Microsatellite

Found throughout animal genomes are specific sequences of bases repeated in a tandem fashion and referred to as **Microsatellite DNA markers**. The most common microsatellite markers contain a two base sequence repeated in tandem, hence they are also referred to as short tandem repeats or STRs for short. The number of tandem repeats found at any given microsatellite marker will vary between individual animals. Places in the DNA where there are differences from one individual to the next are known as genetic variation. Genetic variation at the microsatellite level has been exploited by molecular biologists for a variety of functions. Microsatellite markers are the basis for individual identification, in forensics application for example, and are also used for the majority of animal parentage testing done today.

Parentage testing identifies individuals that, due to a specific combination of marker alleles, could qualify as a parent for a particular offspring. Accurate parentage testing requires breeders to identify possible parents since if considering a randomly selected large group of individuals there could be more than one that qualifies as a parent. As an example, human paternity testing was originally developed as a means to verify that a named individual could or could not be the father of a given child. At most it was meant to determine if one of several men could be the father of a child. The same rules hold true for animal parentage testing. A good application for animal parentage testing is verification that the dam is correct and which of the sires on a particular farm are the actual sire.

Finally, it is important to remember that while parentage exclusions are 100% accurate, parentage qualifications are not. The accuracy of most animal parentage tests is greater than 99% when both parents are included in the analysis and drops to around 95% when only one parent is included in the analysis. However, this accuracy will decrease when the potential parents are part of a large group of closely related animals. Again, an animal closely related to an actual parent could possess marker alleles that make it appear to be the correct parent. To prevent erroneous parentage qualifications, breeders need to submit samples from all possible parents when first requesting parentage verification. If more than one sire and one dam qualify as parents of an offspring, the laboratory can then test with additional DNA markers to sort out the actual parents.

<https://vgl.ucdavis.edu/services/parentage>

RWHA Fee Schedule

RWHA Fees		
Membership Types	Membership Fees	
Membership - Single	\$25.00	
Membership – Family/Farm	\$40.00	
Registration Fees	Members	Non-Members
Under 6 months	\$10.00	NA
Over 6 months	\$15.00	NA
Transfers	\$12.00	\$35.00
Duplicate Certificates	\$50.00	NA
DNA Fees	Members	Non-Members
UC Davis Veterinary Genetics Laboratory – Parentage*	\$40.00 / sample Paid to UC Davis	NA
Neogen Genomics – Parentage**	\$19.50 / sample Paid to RWHA	NA

Registration Fees: (Payable to: Mountain Niche Registry Services - RWHA)

*See UC Davis Veterinary Genetics Laboratory Documentation for description.

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