



Genetic Profile Test Results

HORSE ID: 041418 003

Horse: Merlin

PACK: 1

Owner: Alecia Baxley

Horse and Owner Information

Horse	Merlin	DOB	2018-04-04
Breed	Paint (Overo)	Age	0 years, 0 months
Color	Chestnut/Overo	Sex	Stallion
Discipline	Halter	Height
Registry	APHA	Reg Number	Pending
Sire	Ententions	Dam	Shes Forever Cool
Sire Reg & No.	Quarter 5605512	Dam Reg & No.	APHA 996357
Comments		

Owner	Alecia Baxley	Address	968 County Road 2117
Phone	281 592 6550	City, State	Cleveland, TX
Email	lazylagoonranch@aol.com	Postal Code	77327



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Results Summary

Coat Color: Merlin has two Red alleles and no Black, indicating his base coat color appears Red. One Dominant White 20 allele and one Frame/Lethal White Overo allele was also detected which may result in White markings. As a result of the allele count in each of the following, he has a minimum 100% chance of passing Red, and 50% Dominant White 20 and/or Frame/Lethal White Overo to any offspring.

Allele Summary: aa, ee, W20/n, LWO/n, HYPP/n, CC (Sprint Type)

Traits: Merlin's testing indicated the presence of one Frame/Lethal White Overo (LWO) allele resulting in "Carrier" status. Caution is recommended when breeding to avoid another carrier and thus, 25% chance of foal death. His testing also indicated the presence of one Hyperkalemic Periodic Paralysis (HYPP) allele indicating "Carrier" and "Possibly Affected" status. Please consult with your veterinarian regarding any medical questions or advice. Caution is recommended when breeding to avoid another carrier and thus a 25% chance of "affected" offspring.

Please note: Your analysis is ongoing and may include some regions marked with an asterisk denoting the following.
* Discovery - This gene detection is in the early stages of discovery and will have varying reliability results.
** Inconclusive - Not a bad omen! Simply put, the gene of interest did not reveal itself (neither a positive nor a negative; no result, therefore unknown).



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Coat Color Results

Base

Agouti	-/-	<i>ASIP</i>	aa - No dominant Agouti alleles detected; restricts any Black base to appear Bay.	More about A
Black/Red	-/-	<i>MC1R</i>	ee - No Black alleles detected and two Red.	More about E

Modifier

Brindle/IP	-/-	<i>IKBKG</i>	No Brindle/IP alleles detected.	More about IP
Grey	-/-	<i>STX17A</i>	No Grey alleles detected.	More about G

Dilution

Champagne	-/-	<i>SLC36A1</i>	No Champagne alleles detected.	More about CH
Cream	-/-	<i>SLC45A2</i>	No Cream alleles detected.	More about CR
Dun	-/-,-/-	<i>TBX3</i>	nd2/nd2 (non-dun). Two non-dun2 alleles detected. No Dun or non-Dun Primitive Marking alleles detected.	More about Dun
Pearl	-/-	<i>SLC45A2</i>	No Pearl alleles detected.	More about prl
Silver	-/-	<i>PMEL17</i>	No Silver alleles detected.	More about Z



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Coat Color Results, continued

White Patterns Results

Dominant White	+/-	<i>KIT</i>	W20/n - One Dominant White 20 allele detected (DW1-21).	More about DW
Frame Overo (LWO)	+/-	<i>EDNRB</i>	LWO/n - One Frame Overo (LWO) allele detected.	More about LWO
Leopard Complex Spotting (LP)	-/-	<i>TRPM1</i>	No Leopard Complex Spotting (LP) alleles detected.	More about LP
Pattern 1 (LP modification)	-/-	<i>RFWD3</i>	No Pattern 1 (LP modification) alleles detected.	More about PATN1
Splashed White (MITF)	-/-,-/-	<i>MITF</i>	No Splashed White 1 nor Splashed White 3 alleles detected.	More about SW (MITF)
Splashed White (PAX3)	-/-,-/-	<i>PAX3</i>	No Splashed White 2 nor Splashed White 4 alleles detected.	More about SW (PAX3)
Sabino 1	-/-	<i>KIT</i>	No Sabino 1 alleles detected.	More about SB1
Tobiano	-/-	<i>ECA3</i>	No Tobiano alleles detected.	More about TO



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Health Genetics 1

Immune System

Foal Immunodeficiency Syndrome	-/-	SLC5A3	No Foal Immunodeficiency Syndrome alleles detected.	More about fis
Severe Combined Immunodeficiency	-/-	DNAPK	No Severe Combined Immunodeficiency alleles detected.	More about scid
West Nile*	-/-	OAS1	Normal susceptibility to West Nile Virus.	More about WNVR*

Muscle Disorders

Glycogen Branching Enzyme Deficiency	-/-	GBE1	No Glycogen Branching Enzyme Deficiency alleles detected.	More about gbed
Hyperkalemic Periodic Paralysis	+/-	SCN4A	HYPP/n - One Hyperkalemic Periodic Paralysis allele detected. Carrier.	More about HYPP
Malignant Hyperthermia	-/-	RYR1	No Malignant Hyperthermia alleles detected.	More about MH
Myotonia	-/-	CLCN4	No Myotonia alleles detected.	More about myt
Polysaccharide Storage Myopathy (type 1)	-/-	GYS1	No Polysaccharide Storage Myopathy (type 1) alleles detected.	More about PSSM1



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Health Genetics 2

Neurologic Disorders

Cerebellar Abiotrophy	-/-	<i>MUTYH</i>	No Cerebellar Abiotrophy alleles detected.	More about ca
Lavender Foal Syndrome	-/-	<i>MYO5A</i>	No Lavender Foal Syndrome alleles detected.	More about lfs

Reproductive Disorders

Androgen Insensitivity	-/-	<i>AR</i>	No Androgen Insensitivity alleles detected.	More about as
IAR - Subfertility*	+/, +/-	<i>FKBP6</i>	Three IAR Subfertility* alleles detected; likely no effect.	More about iar*

Skin Disorders

Hereditary Equine Regional Dermal Asthenia	-/-	<i>PPIB</i>	No Hereditary Equine Regional Dermal Asthenia alleles detected.	More about herda
Junctional Epidermolysa Bullosis (type 1)	-/-	<i>LAMC2</i>	No Junctional Epidermolysa Bullosis (type 1) alleles detected.	More about jeb1
Junctional Epidermolysa Bullosis (type 2*)	-/-	<i>LAMA3</i>	No Junctional Epidermolysa Bullosis (type 2*) alleles detected.	More about jeb2*



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Other Genetics

Trait Genetics

Lordosis*	-/-,+/-,-/-,+/+	ECA20	No pattern of Lordosis* alleles detected.	More about L*
Curiosity/Vigilance*	+/+	DRD4	Cur - GG - Two Curiosity alleles detected; likely more curious than vigilant.	More about Cur/Vig
Myostatin/Speed	+/+	MSTN	CC (Sprint Type) - Two Sprint alleles detected; likely Sprint ability over Endurance.	More about MSTN
Gait	-/-	DMRT3	No Gait alleles detected.	More about Gaited



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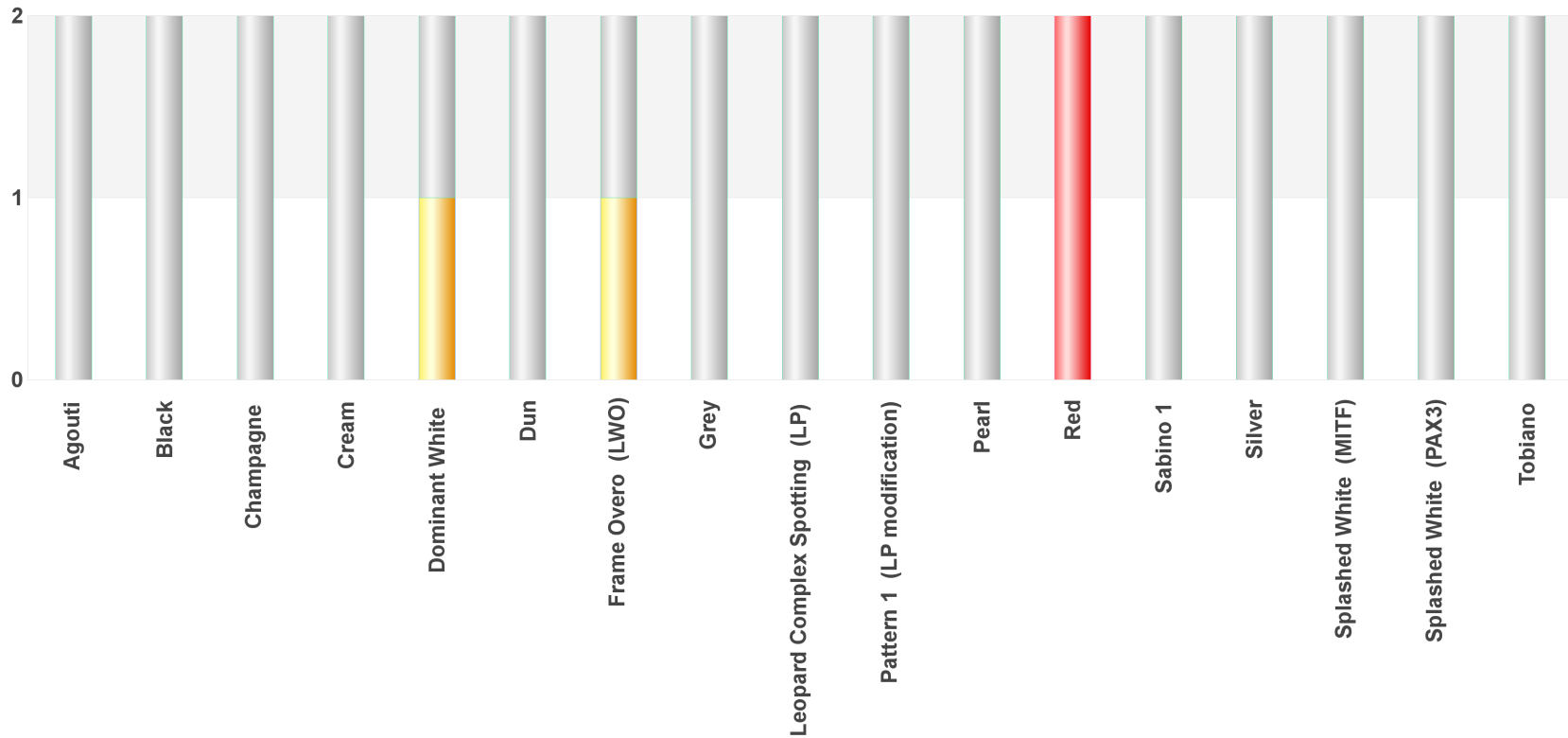
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Inheritance Probabilities

Coat Color



Coat Color Inheritance Probabilities: The bar graph above depicts the number of alleles for specific coat color phenotypes based upon your horse's genetic testing results. Completely filled red bar represents two such alleles (homozygous) and a half-filled yellow bar represents one such allele (heterozygous).



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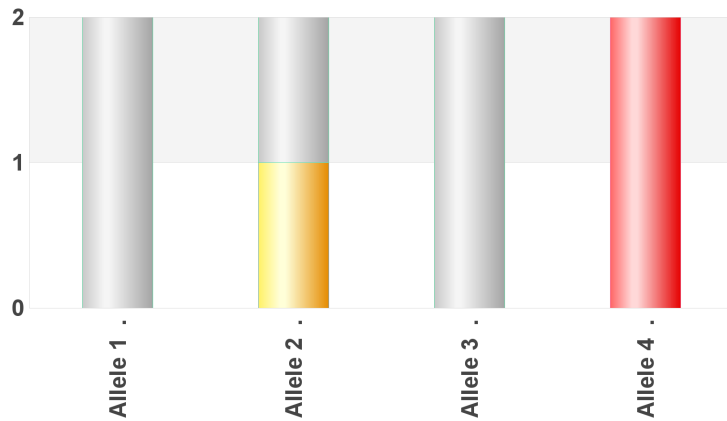
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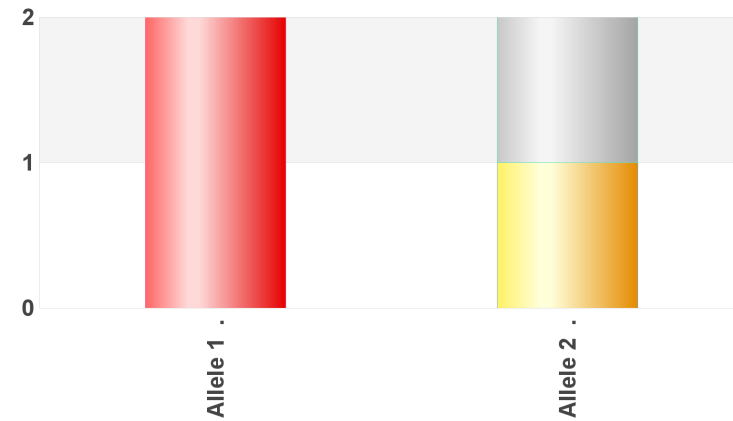
Inheritance Probabilities

Lordosis



Not affected

IAR Subfertility*



Not affected

Multi-allele Risk Charts: Each chart represents a trait, and each bar indicates a distinct risk or allele presence. These act in combination to produce the trait. A red bar indicates the horse carries 2 risk alleles at the site; a partly-yellow bar indicates 1 risk allele; and a fully-grey bar indicates 0 risk alleles. If all bars are red, then the horse carries two risk alleles at each risk site and is likely affected. If all bars contain yellow or red, but are not all red, then the horse is likely a carrier. Otherwise, the horse is not a likely carrier of the tested trait.



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Defining Genetics & More Info

Allele:	One of two or more alternative forms of a gene that arise by mutation and are found at the same place on a chromosome.
Alleles: Heterozygous vs. Homozygous?	Allele calls are written in a way that denotes their origin and whether they are DOMINANT (uppercase) or recessive (lowercase). For example, at MC1R (also known as extension), Black is dominant and thus written as "E" whereas Red is recessive and thus denoted as "e". Therefore, an EE horse is homozygous for Black (and thus appears black), an ee horse is homozygous for Red (appears Red), and an Ee horse is heterozygous (shows the dominant allele, thus is Black).
Gene:	A unit of heredity that is transferred from a parent to offspring and is thought to determine some characteristic of the offspring.
Genotype:	The genetic constitution or make up of an individual organism.
Heterozygous:	A pair of genes which are different (not the same). One is typically dominant and one recessive.
Homozygous:	A pair of genes that are identical (of one type).
Phenotype:	The observable or visible characteristics of an individual resulting from their genotype or the interaction of their various genes and environment.

The results depicted in this report do not constitute veterinary or medical advice. Any medical or veterinary advice should be sought from your veterinarian regarding these results or any health issues or questions you may have about your animal. Breed, sex, gene interaction, unknown genes and individual variances may impact the results, phenotypes, and behaviors in any animal in unknown and unpredictable ways. Please be advised that your animals' health is important to us and you should feel free to contact us should you have any further questions or feedback on our diagnostic platform, results reporting, or general questions. We value your input and thank you!