



Genetic Profile Test Results

HORSE ID: 080718 018

Horse: Giant Heart Rof

PACK: APHA

Owner: Cecile Penverne

Horse and Owner Information

Horse	Giant Heart Rof	DOB	2016-04-22
Breed	Paint (Tobiano)	Age	2 years, 4 months
Color	bay dun tobiano	Sex	Stallion
Discipline	Cutting	Height	1.46 hands
Registry	APHA	Reg Number	1060215
Sire	Mr Heart Attack	Dam	Coatinga poco smoke
Sire Reg & No.	APHA 617967	Dam Reg & No.	APHA 1019686
Comments		

Owner	Cecile Penverne	Address	la villeneuve zinsec
Phone	662307475	City, State	Bern+AMMAqQ-
Email	cymelapainthorse@free.fr	Postal Code	56240



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Results Summary

Coat Color: Giant Heart Rof has no Red alleles and two Black, indicating his base coat color appears Black. One copy of the Dominant Agouti allele was detected; invisible on a Red base, it pushes/restricts Black out to points; legs, ear tips, etc. appearing Bay. Two Dun alleles were detected which may dilute base coat color. Two Tobiano alleles were 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 Black and Dun and Tobiano, and 50% Dominant Agouti to any offspring.

Allele Summary: Aa, EE, D/D, TO/TO, CC (Sprint Type)

Traits: Giant Heart Rof has not tested positive for any recessive disease alleles on this panel.

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 - One dominant Agouti allele detected; restricts any Black base to appear Bay.	More about A
Black/Red	+/+	<i>MC1R</i>	EE - Two Black alleles detected and no 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>	D/D (Dun). Two Dun 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>	No Dominant White alleles detected (DW1-21).	More about DW
Frame Overo (LWO)	-/-	<i>EDNRB</i>	No Frame Overo (LWO) alleles 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>	TO/TO - Two 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	WNVR*/n - Increased 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	No Hyperkalemic Periodic Paralysis alleles detected.	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	-/-	MUTYH	No Cerebellar Abiotrophy alleles detected.	More about ca
Lavender Foal Syndrome	-/-	MYO5A	No Lavender Foal Syndrome alleles detected.	More about lfs

Reproductive Disorders

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

Skin Disorders

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



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Other Genetics

Trait Genetics

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



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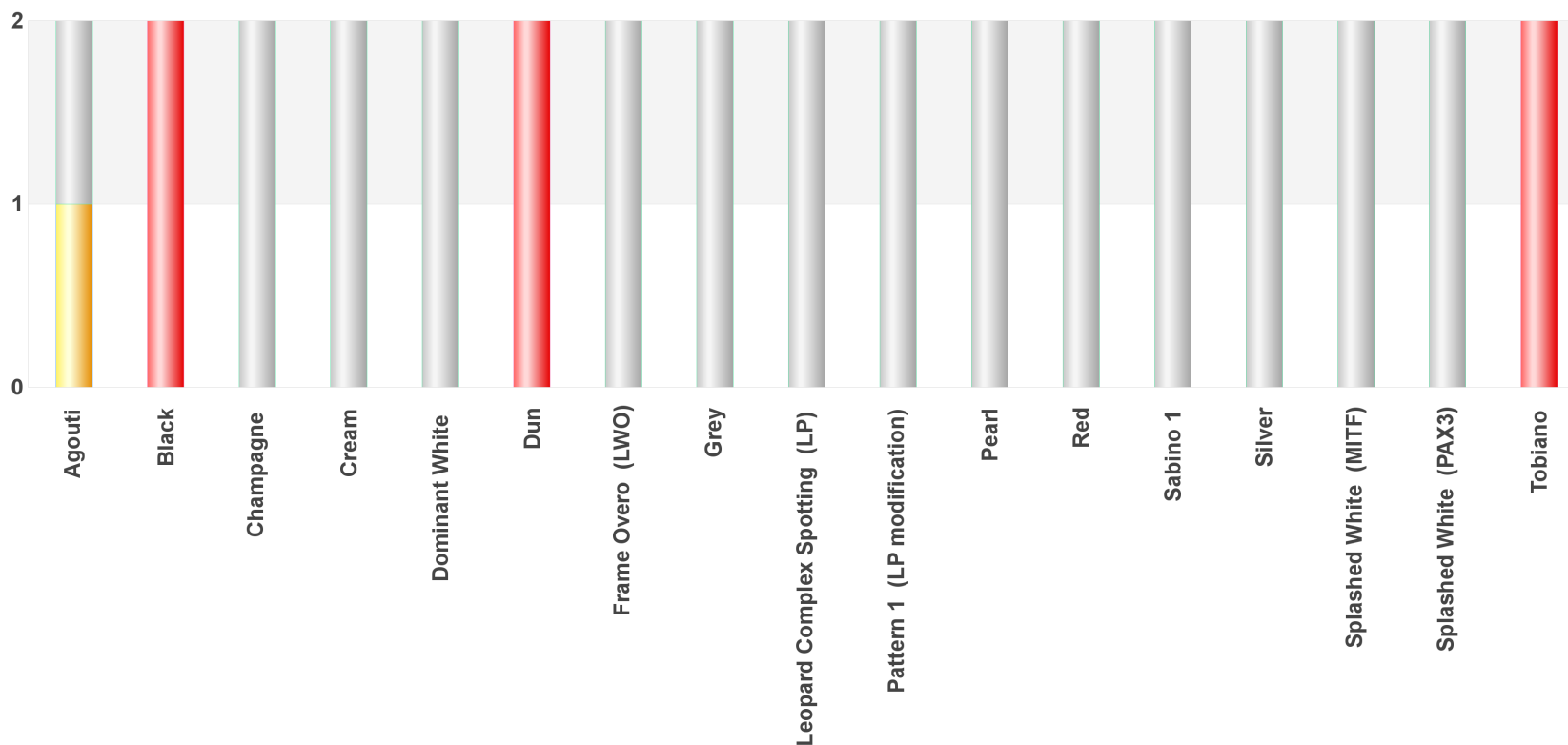
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Inheritance Probabilities

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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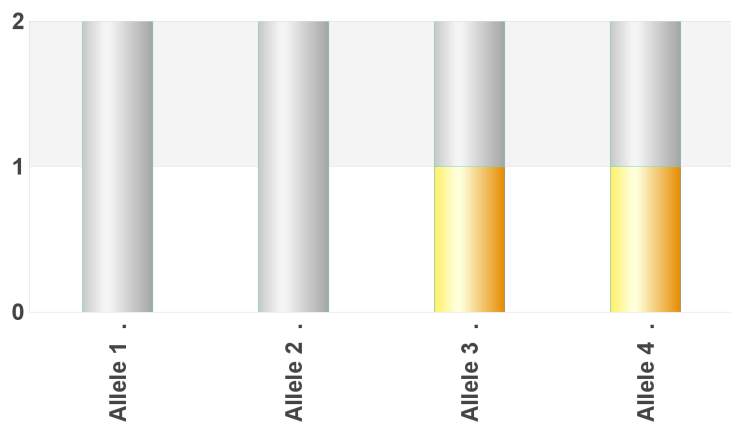
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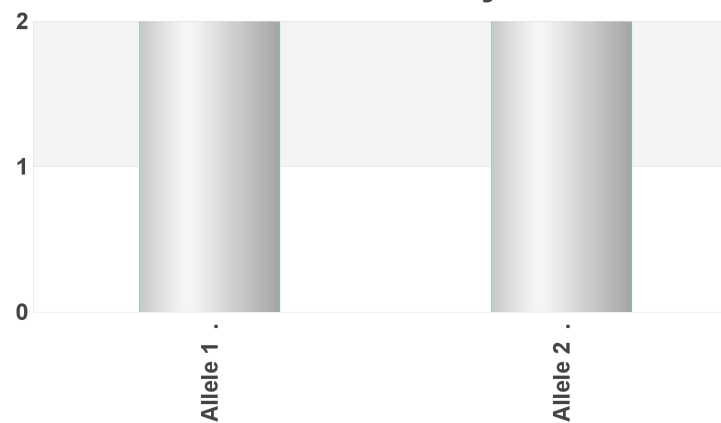
Inheritance Probabilities

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!