



Genetic Profile Test Results

Horse: Grahla M.U.G

Owner: Lynn Kelley

Horse and Owner Information

Horse	Grahla M.U.G	DOB	1998-12-23
Breed	Mangalarga Marchador	Age	17 years, 10 months
Color	Brown	Sex	Mare
Discipline	.....	Height	15.1 hands
Registry	.....	Reg Number	.....
Sire	Enigma Scala	Dam	Betania da Nova Geracao
Sire Reg & No.	.....	Dam Reg & No.	.....
Comments	.....	

Owner	Lynn Kelley	Address	3121 W Desert Hill Dr
Phone	602.999.3915	City, State	Phoenix, AZ
Email	lynnkelley@me.com	Postal Code	85086



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Results Summary

Coat Color: Grahla M.U.G has one Red allele and one Black, indicating her 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. As a result of the allele count in each of the following, she has a minimum 50% chance of passing Red or Black and Dominant Agouti to any offspring.

Allele Summary: Aa, Ee, TT (Endurance Type), Gaited/n

Traits: Grahla M.U.G has not tested positive for any recessive disease alleles on this panel. Her testing has indicated the presence of one DMRT3 (Gaited) allele, and she may, therefore, pass it to 50% of any 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	+/-	ASIP	Aa - One dominant Agouti allele detected; restricts any Black base to appear Bay.	More about A
Black/Red	+/-	MC1R	Ee - One Black allele detected and one Red.	More about E

Modifier

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

Dilution

Champagne	-/-	SLC36A1	No Champagne alleles detected.	More about CH
Cream	-/-	SLC45A2	No Cream alleles detected.	More about CR
Dun	,-/-,-/-,-/-	TBX3	No Dun alleles detected.	More about Dun
Pearl	-/-	SLC45A2	No Pearl alleles detected.	More about prl
Silver	-/-	PMEL17	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>	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	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	-/-	<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>	Two IAR Subfertility* alleles detected.	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*
Warmblood Fragile Foal Syndrome	-/-	<i>PLOD1</i>	No Warmblood Fragile Foal Syndrome alleles detected.	More about WFFS



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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	TT (Endurance Type) - Two Endurance alleles detected; likely Endurance ability over Sprint.	More about MSTN
Gait	+/-	DMRT3	Gaited/n - One Gait allele detected.	More about Gaited



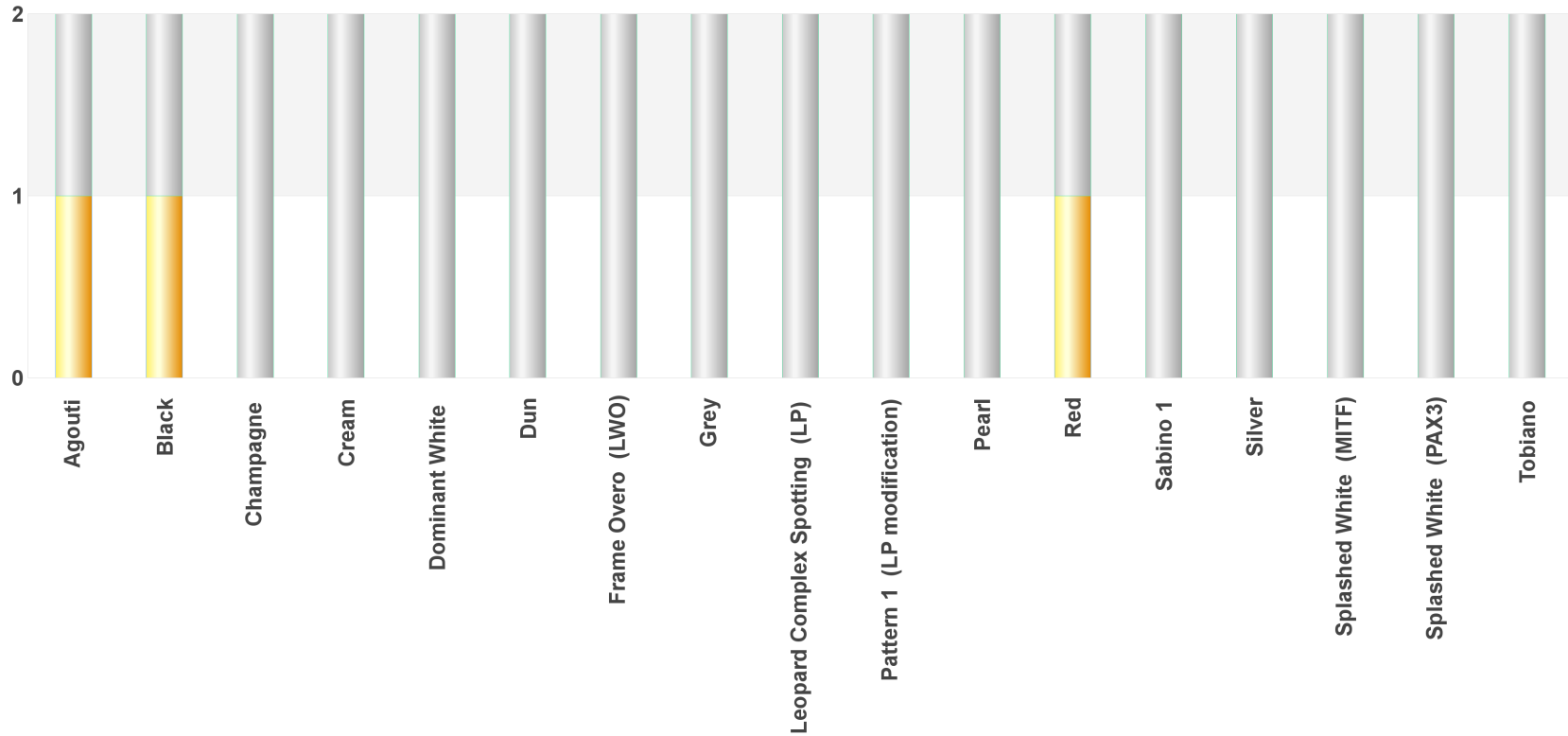
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Inheritance Probabilities

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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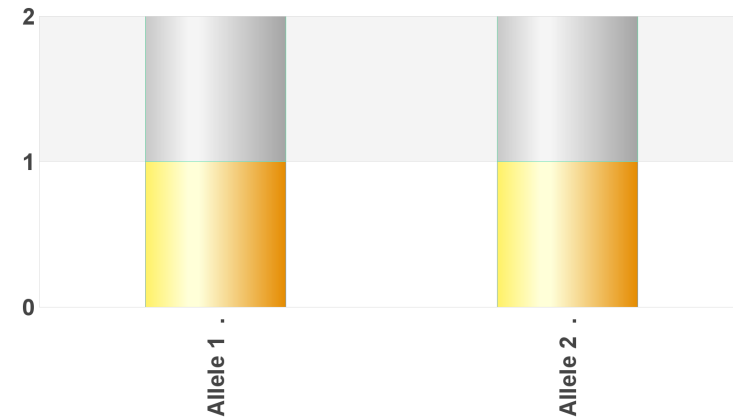
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Inheritance Probabilities

Lordosis



IAR Subfertility*



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 a 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!