Genetic Profile Test Results

HORSE ID: 061119 022

Horse: Haap Above the Ddinn

PACK: Etalon DNA Minipanel

Owner: Steve Hugus

Horse and Owner Information

Horse	Haap Above the Ddinn	**DOB**	2017-05-06
Breed	Half-Arabian	**Age**	2 years, 1 months
Color	Bay	**Sex**	stallion
Discipline	Breeding	**Height**	. . . . .
Registry	Half-Arabian Horse Registry	**Reg Number**	7A 378696
Sire	HAAP PALADDINN	**Dam**	RAY DOR PELAGEA
Sire Reg & No.	Half-Arabian Horse Registry 6A 369001	**Dam Reg & No.**	Arabian Horse Association 617765
Comments	Description: Tobiano		

Owner	Steve Hugus	**Address**	323 Sheep Camp
Phone	307-856-0212 / 3078560212	**City, State**	Pavillion, WY
Email	shugus@wyoming.com	**Postal Code**	82523

Genetic Profile Test Results

HORSE ID: 061119 022

Horse: Haap Above the Ddinn

PACK: Etalon DNA Minipanel

Owner: Steve Hugus

Results Summary

Coat Color:	Haap Above the Ddinn has two Black alleles and no Red alleles, indicating the 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. One Tobiano allele was 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 50% Dominant Agouti and/or Tobiano to any offspring.
Allele Summary:	**Aa, EE, nd1/nd1, TO/n** **Myostatin: Endurance Type** **Arabian 3 panel negative: CA n/n, LFS n/n, SCID n/n**
Traits:	Haap Above the Ddinn has not tested positive for any recessive disease alleles on this panel. *The DNA was also tested on our discovery/validation platform for non-Dun Primitive Markings. Preliminary results indicate this horse is homozygous for non-Dun Primitive Markings (nd1/nd1) and may pass it to 100% 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).

Genetic Profile Test Results

HORSE ID: 061119 022

Horse: Haap Above the Ddinn

PACK: Etalon DNA Minipanel

Owner: Steve Hugus

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 - Two Black alleles detected and no 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***	nd1/nd1 (non-dun with possible primitive markings). Two non-dun1 alleles detected. 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

Genetic Profile Test Results

Horse: Haap Above the Ddinn

Owner: Steve Hugus

HORSE ID: 061119 022

PACK: Etalon DNA Minipanel

Coat Color Results, continued

White Patterns Results

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

Genetic Profile Test Results

Horse: Haap Above the Ddinn

Owner: Steve Hugus

HORSE ID: 061119 022

PACK: Etalon DNA Minipanel

ETALON DIAGNOSTICS

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 Virus Susceptibility*	+/-	***OAS1***	One WNVR* allele detected. Increased susceptibility to West Nile Virus symptoms.	More about WNVR*
Immune-mediated Myositis*	**	***MYH1***	**Upon request only, inquire about upgrade.	More about IMM*

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

Genetic Profile Test Results

HORSE ID: 061119 022

Horse: Haap Above the Ddinn

PACK: Etalon DNA Minipanel

Owner: Steve Hugus

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.	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*

Genetic Profile Test Results

HORSE ID: 061119 022

Horse: Haap Above the Ddinn

PACK: Etalon DNA Minipanel

Owner: Steve Hugus

Other Genetics

Trait Genetics

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

New Additions for 2019

Equine Recurrent Uveitis (Risk)*	***	***ECA18***	***DNA Minipanel PLUS only, inquire about upgrade.	More about ERU
Equine Recurrent Uveitis (Severity)*	***	***ECA20***	***DNA Minipanel PLUS only, inquire about upgrade.	More about ERU
Equine Metabolic Syndrome*	***	***FAM174A***	***DNA Minipanel PLUS only, inquire about upgrade.	More about EMS
Laminitis Risk*	***	***FAM174A***	***DNA Minipanel PLUS only, inquire about upgrade.	More about LAM
Squamous Cell Carcinoma*	***	***DDB2***	***DNA Minipanel PLUS only, inquire about upgrade.	More about SCC
Tiger Eye*	***	***SLC24A5***	***DNA Minipanel PLUS only, inquire about upgrade.	More about Tiger Eye
Dwarfism*	***	***ACAN***	***DNA Minipanel PLUS only, inquire about upgrade.	More about Dwarfism

Genetic Profile Test Results

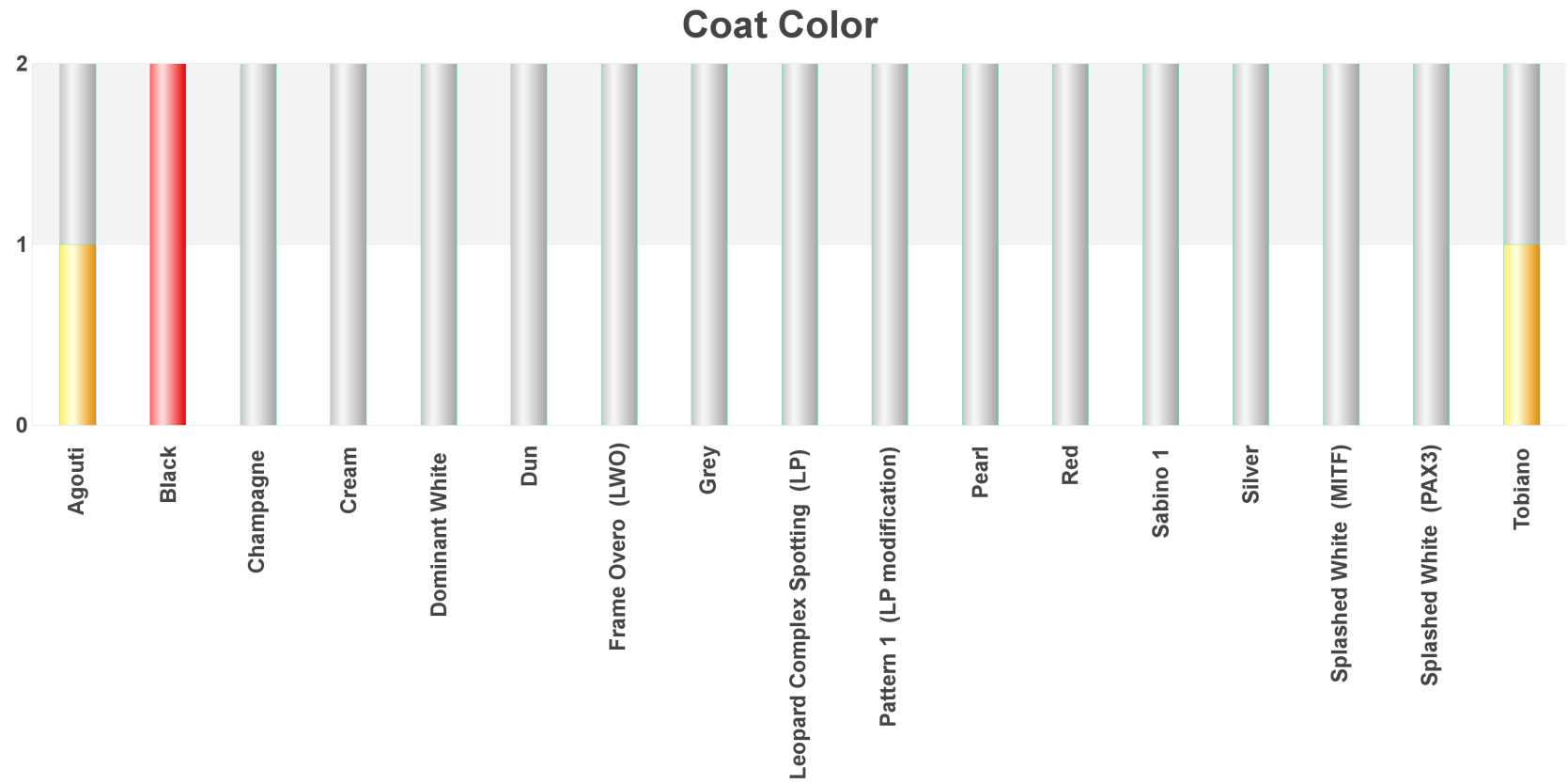
HORSE ID: 061119 022

Horse: Haap Above the Ddinn

PACK: Etalon DNA Minipanel

Owner: Steve Hugus

Inheritance Probabilities



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).

Genetic Profile Test Results

HORSE ID: 061119 022

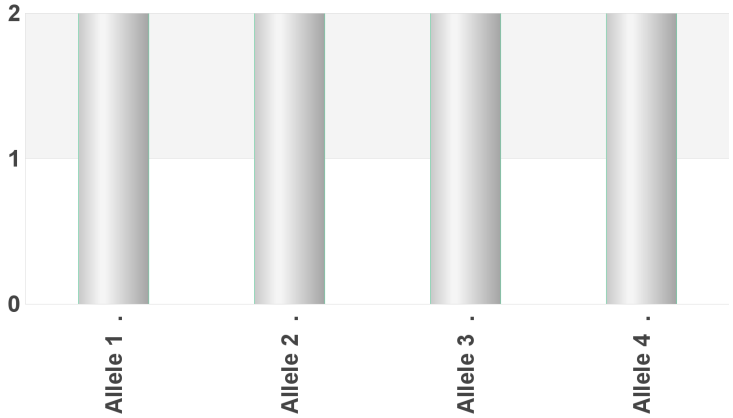
Horse: Haap Above the Ddinn

PACK: Etalon DNA Minipanel

Owner: Steve Hugus

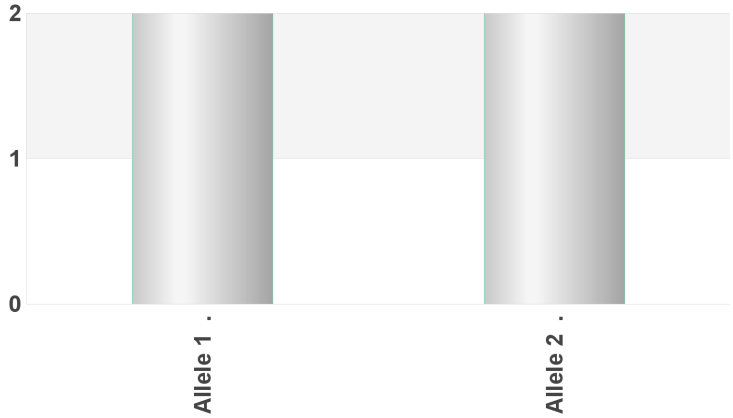
Inheritance Probabilities

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 a carrier of the tested trait.

Genetic Profile Test Results

HORSE ID: 061119 022

Horse: Haap Above the Ddinn

PACK: Etalon DNA Minipanel

Owner: Steve Hugus

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 of 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!