ETALON DIAGNOSTICS

Genetic Profile Test Results

Horse: Haap Ibn Paladdinn **Owner:** Steve Hugus

Horse and Owner Information

Horse	Haap Ibn Paladdinn	**DOB**	06.05.2016
Breed	Half-Arabian	**Age**	0
Color	Bay	**Sex**	S
Discipline		**Height**	
Registry	Half-Arabian Horse Registry	**Reg. Number**	7A 377845
Sire		**Dam**	
Sire Reg.	Half-Arabian Horse Registry	**Dam Reg.**	Arabian 639907
Comments:			

Owner	Steve Hugus	**Address**	323 Sheep Camp
Phone	307.856.0212	**City, State**	Pavillion, WY
E-mail	shugus@Wyoming.com	**Zip Code**	82523

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Results Summary

Coat Color : Haap Ibn Paladdinn has two Black alleles and no Red indicating his base coat color appears Black. One copy of the dominant Agouti allele was also detected; pushes Black out to points; legs, ear tips, etc. appearing Bay. A single Tobiano 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 Black, and 50% Dominant Agouti and/or Tobiano to any offspring.

Allele Summary: **Aa, EE, To/n, TT (Endurance type)**

Traits: Haap Ibn Paladdinn has not tested positive for any recessive disease genes on this panel. *His DNA was also testing on our discover/validation platform for non-Dun Primitive Markings. Preliminary results indicate he is positive for Primitive Markings (nd1/nd1).

Notes: Please note that 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, unknown)

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Coat Color/Patterns Results

Agouti	**+/-**	***ASIP***	Aa - One dominant Agouti allele detected; restricts any Black base to appear Bay	More about *Agouti*
Black/Red	**+/+**	***MC1R***	EE – Two Black alleles detected and no Red	More about *Black/Red*
Champagne	**-/-**	***SLC36A1***	No Champagne alleles detected	More about *Champagne*
Cream/Pearl	**-/-**	***SLC45A2***	No Cream/Pearl alleles detected	More about *Cream*
Dominant White	**-/-**	***KIT***	No Dominant White alleles detected (DW1-21)	More about *D. White*
Dun	**-/-**	***TBX3***	No Dun alleles detected; *with primitive markings (discovery project)	More about *Dun*
Frame Overo	**-/-**	***EDNRB***	No Frame Overo alleles detected	More about *Overo*
Grey	**-/-**	***STX17A***	No Grey alleles detected	More about *Grey*
Leopard Complex Spotting (LP)	**-/-**	***TRPM1***	No Leopard Pattern alleles detected	More about *Lp*
Pattern 1 (LP modification)	**-/-**	***RFWD3***	No PATN1 alleles detected	More about *PATN1*
Sabino	**-/-**	***KIT***	No Sabino alleles detected	More about *Sabino*
Silver	**-/-**	***PMEL17***	No Silver alleles detected	*More about Silver*
Splashed White	**-/-**	***MITF***	No Splashed White alleles detected (SW 1, 3)	More about *S White*
Splashed White	**-/-**	***PAX3***	No Splashed White alleles detected (SW 2, 4)	More about *Spotting*
Tobiano	**+/-**	***ECA3***	One Tobiano allele detected	More about *Tobiano*

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Health Genetics

AIS	**-/-**	***AR***	No Androgen Insensitivity alleles detected	More about *AIS*
Cereb. Abiotrophy	**-/-**	***MUTYH***	No Cerebellar Abiotrophy alleles detected	More about *CA*
FIS	**-/-**	***SLC5A3***	No Foal Immunodeficiency Syndrome alleles detected	More about *FIS*
GBED	**-/-**	***GBE1***	No Glycogen Branching Enzyme Deficiency alleles detected	*More about GBED*
HERDA	**-/-**	***PPIB***	No Hereditary Equine Regional Dermal Asthenia alleles detected	More about *HERDA*
HYPP	**-/-**	***SCN4A***	No Hyperkalemic Periodic Paralysis alleles detected	More about *HYPP*
IAR – Subfertility*	**-/-; -/-**	***FKBP6***	No Subfertility alleles detected: likely no effect*	More about *IAR*
JEB1/JEB2*	**-/-; -/-**	***LAMC2/3***	No Junctional Epidermolysa Bullosis alleles detected	More about *JEB1*
LFS	**-/-**	***MYO5A***	No Lavender Foal Syndrome alleles detected	More about *LFS*
MH	**-/-**	***RYR1***	No Malignant Hyperthermia alleles detected	More about *MH*
Myotonia	**-/-**	***CLCN4***	No Myotonia alleles detected	More about *Myotonia*
PSSM1	**-/-**	***GYS1***	No Polysaccharide Storage Myopathy alleles detected	More about *PSSM*
SCID	**-/-**	***DNAPK***	No Severe Combined Immunodeficiency alleles detected	More about *SCID*
West Nile*	**+/-**	***OAS1***	Increased susceptibility to West Nile Virus	More about *WNVR*

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Trait Genetics

Lordosis*	**0/8**	***ECA20***	No lordosis risk alleles detected, no effect	More about *Lordosis*
Curiosity/Vigilance*	**+/+**	***DRD4***	GG – Two Curiosity alleles detected; likely more curious than vigilant	More about *C/V*
Myostatin/Speed	**-/-**	***MSTN***	TT – Two Endurance alleles detected; likely Endurance ability over Sprint	More about *Myostatin*
Gait	**-/-**	***DMRT3***	No Gaited alleles detected	More about *Gait*

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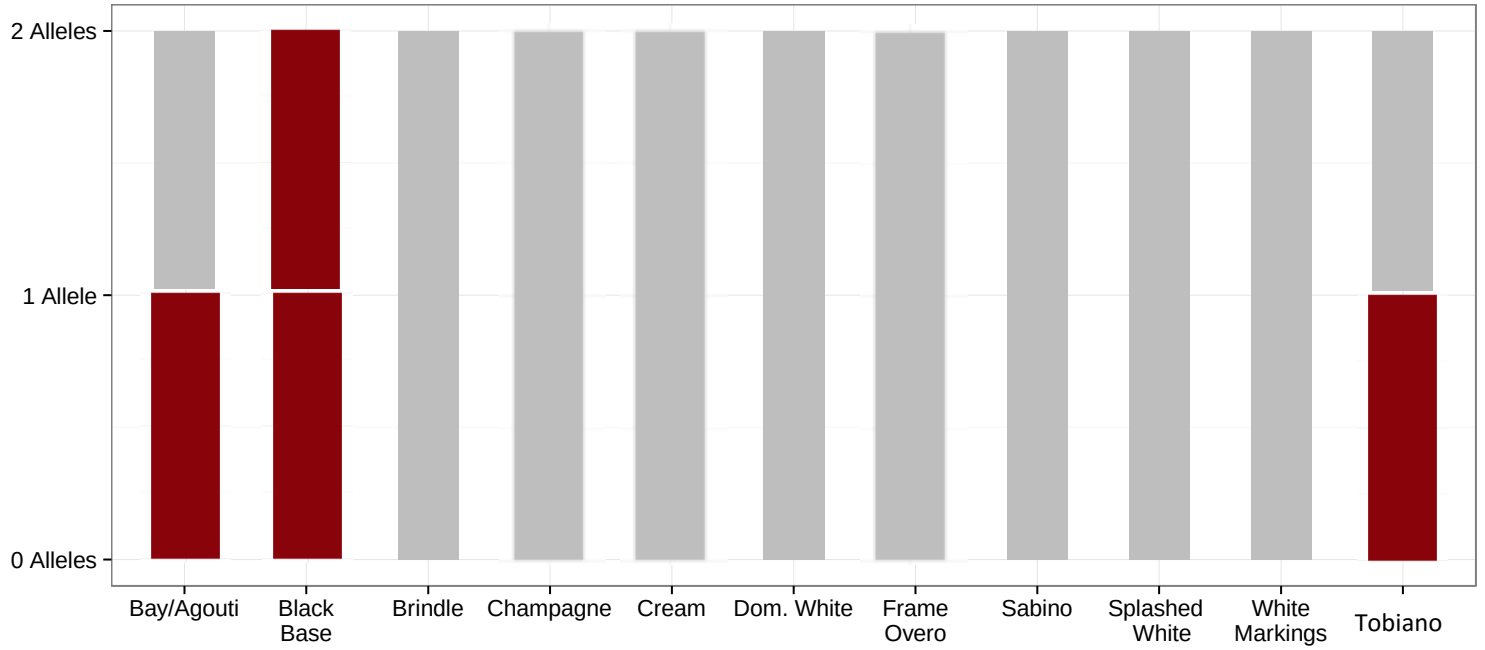
Coat Color Inheritance Probabilities



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. Filled in red represents the probability that offspring of your horse will have that coat phenotype.

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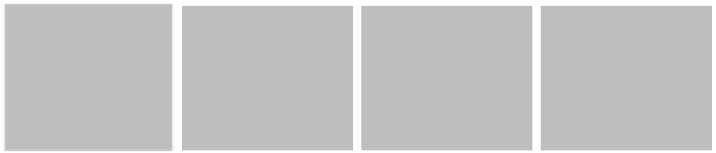
Health Genetics

Lordosis (0/8)



IAR (0/4)

Multi-allele Risk Graph: Each bar indicates a trait and each box indicates a distinct risk site that act in combination towards the trait. A red box indicates the horse carriers 2 risk alleles at the site, an orange box indicates 1 risk allele, and a grey box indicates 0 risk alleles. An all red bar indicates that the horse carries two risk alleles at each risk site and is likely affected. A bar filled completely with orange and red indicates the horse may be a carrier. Otherwise, the horse is not a likely a carrier of the risk allele.

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Defining Genetics & More Info

Allele -	One of two or more alternative forms of a gene that arise by mutation.
Gene -	A region on a chromosome that encodes a protein. Differences in proteins lead to the visible variation we see in life (phenotypes). An organism generally has two copies of any given gene, and will pass one at random to its offspring.
Genotype -	The genetic constitution or make up of an individual organism
Heterozygous -	A pair of alleles at a gene which are different (not the same).
Homozygous -	A pair of alleles at a gene 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/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 & thank you!