



## Genetic Profile Test Results

**Horse:** Blue Valentine Smoke

**Owner:** Jeremy Lockard

### Horse and Owner Information

<b>Horse</b>	Blue Valentine Smoke	<b>DOB</b>	2009-00-00
<b>Breed</b>	Paints (All)	<b>Age</b>	9 years, 0 months
<b>Color</b>	Grulla	<b>Sex</b>	Mare
<b>Discipline</b>	Unknown	<b>Height</b>	.....
<b>Registry</b>	APHA	<b>Reg Number</b>	981813
<b>Sire</b>	.....	<b>Dam</b>	.....
<b>Sire Reg &amp; No.</b>	.....	<b>Dam Reg &amp; No.</b>	.....
<b>Comments</b>	.....		

<b>Owner</b>	Jeremy Lockard	<b>Address</b>	15549 Pearl Rd
<b>Phone</b>	563-320-1109	<b>City, State</b>	Randalia, IA
<b>Email</b>	dustyroadhorses.com@gmail.com	<b>Postal Code</b>	52164



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### Results Summary

**Coat Color:** Blue Valentine Smoke has one Red allele and one Black, indicating her base coat color appears Black. One Dun allele was detected which may dilute base coat color. One Dominant White 20 allele was detected which may result in White markings. As a result of the allele count in each of the following, she has a minimum 50% chance of passing Red or Black, and 50% Dun and/or Dominant White 20 to any offspring.

**Allele Summary:** aa, Ee, D/nd1, W20/n, CC (Sprint Type), Gaited/n

**Traits:** Blue Valentine Smoke 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. \*Her DNA was also tested on our discovery/validation platform for non-Dun Primitive Markings. Preliminary results indicate she is homozygous for non-Dun Primitive Markings (D/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).



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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.	<a href="#">More about A</a>
Black/Red	+/-	<i>MC1R</i>	Ee - One Black allele detected and one Red.	<a href="#">More about E</a>

#### Modifier

Brindle/IP	-/-	<i>IKBKG</i>	No Brindle/IP alleles detected.	<a href="#">More about IP</a>
Grey	-/-	<i>STX17A</i>	No Grey alleles detected.	<a href="#">More about G</a>

#### Dilution

Champagne	-/-	<i>SLC36A1</i>	No Champagne alleles detected.	<a href="#">More about CH</a>
Cream	-/-	<i>SLC45A2</i>	No Cream alleles detected.	<a href="#">More about CR</a>
Dun	+/-,+/+	<i>TBX3</i>	D/nd1 (Dun). One Dun allele and one non-dun1 allele detected. Can produce non-dun offspring with possible primitive markings.	<a href="#">More about Dun</a>
Pearl	-/-	<i>SLC45A2</i>	No Pearl alleles detected.	<a href="#">More about prl</a>
Silver	-/-	<i>PMEL17</i>	No Silver alleles detected.	<a href="#">More about Z</a>



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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).	<a href="#">More about DW</a>
Frame Overo (LWO)	-/-	<i>EDNRB</i>	No Frame Overo (LWO) alleles detected.	<a href="#">More about LWO</a>
Leopard Complex Spotting (LP)	-/-	<i>TRPM1</i>	No Leopard Complex Spotting (LP) alleles detected.	<a href="#">More about LP</a>
Pattern 1 (LP modification)	-/-	<i>RFWD3</i>	No Pattern 1 (LP modification) alleles detected.	<a href="#">More about PATN1</a>
Splashed White (MITF)	-/-,-/-	<i>MITF</i>	No Splashed White 1 nor Splashed White 3 alleles detected.	<a href="#">More about SW (MITF)</a>
Splashed White (PAX3)	-/-,-/-	<i>PAX3</i>	No Splashed White 2 nor Splashed White 4 alleles detected.	<a href="#">More about SW (PAX3)</a>
Sabino 1	-/-	<i>KIT</i>	No Sabino 1 alleles detected.	<a href="#">More about SB1</a>
Tobiano	-/-	<i>ECA3</i>	No Tobiano alleles detected.	<a href="#">More about TO</a>



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## Health Genetics 1

### Immune System

<b>Foal Immunodeficiency Syndrome</b>	-/-	<b>SLC5A3</b>	No Foal Immunodeficiency Syndrome alleles detected.	<a href="#">More about fis</a>
<b>Severe Combined Immunodeficiency</b>	-/-	<b>DNAPK</b>	No Severe Combined Immunodeficiency alleles detected.	<a href="#">More about scid</a>
<b>West Nile*</b>	-/-	<b>OAS1</b>	Normal susceptibility to West Nile Virus.	<a href="#">More about WNVR*</a>

### Muscle Disorders

<b>Glycogen Branching Enzyme Deficiency</b>	-/-	<b>GBE1</b>	No Glycogen Branching Enzyme Deficiency alleles detected.	<a href="#">More about gbed</a>
<b>Hyperkalemic Periodic Paralysis</b>	-/-	<b>SCN4A</b>	No Hyperkalemic Periodic Paralysis alleles detected.	<a href="#">More about HYPP</a>
<b>Malignant Hyperthermia</b>	-/-	<b>RYR1</b>	No Malignant Hyperthermia alleles detected.	<a href="#">More about MH</a>
<b>Myotonia</b>	-/-	<b>CLCN4</b>	No Myotonia alleles detected.	<a href="#">More about myt</a>
<b>Polysaccharide Storage Myopathy (type 1)</b>	-/-	<b>GYS1</b>	No Polysaccharide Storage Myopathy (type 1) alleles detected.	<a href="#">More about PSSM1</a>



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## Health Genetics 2

### Neurologic Disorders

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

### Reproductive Disorders

Androgen Insensitivity	-/-	<i>AR</i>	No Androgen Insensitivity alleles detected.	<a href="#">More about as</a>
IAR - Subfertility*	-/-,+/-	<i>FKBP6</i>	One IAR Subfertility* allele detected; likely no effect.	<a href="#">More about iar*</a>

### Skin Disorders

Hereditary Equine Regional Dermal Asthenia	-/-	<i>PPIB</i>	No Hereditary Equine Regional Dermal Asthenia alleles detected.	<a href="#">More about herda</a>
Junctional Epidermolysa Bullosis (type 1)	-/-	<i>LAMC2</i>	No Junctional Epidermolysa Bullosis (type 1) alleles detected.	<a href="#">More about jeb1</a>
Junctional Epidermolysa Bullosis (type 2*)	-/-	<i>LAMA3</i>	No Junctional Epidermolysa Bullosis (type 2*) alleles detected.	<a href="#">More about jeb2*</a>
Warmblood Fragile Foal Syndrome	-/-	<i>PLOD1</i>	No Warmblood Fragile Foal Syndrome alleles detected.	<a href="#">More about WFFS</a>



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### Other Genetics

### Trait Genetics

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



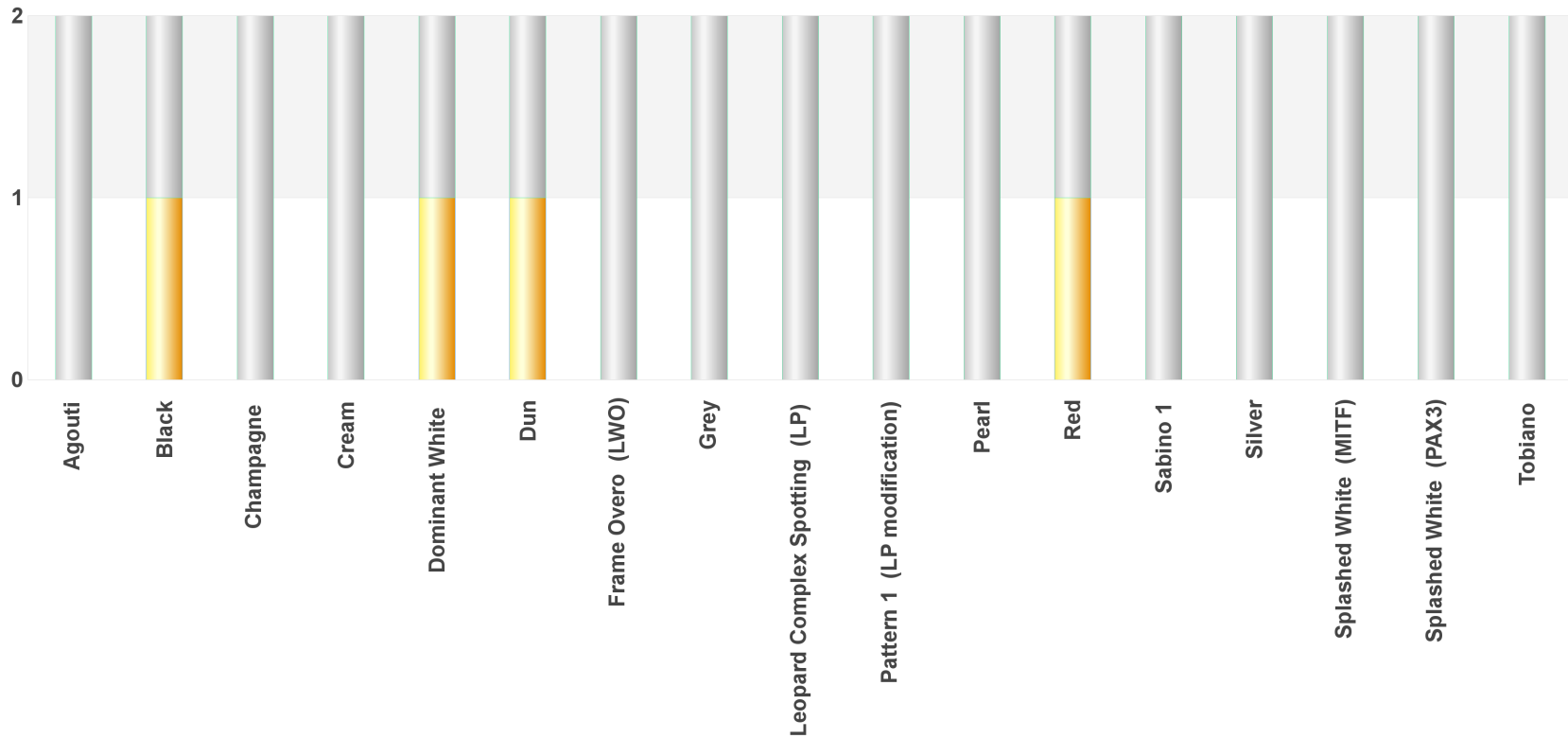
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## Inheritance Probabilities

### 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).





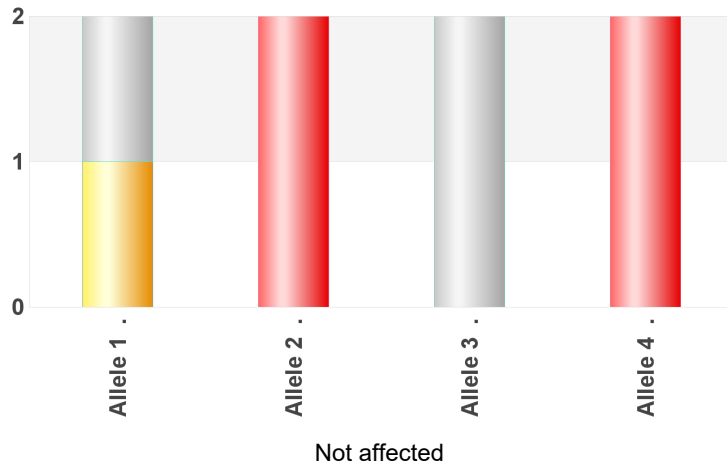
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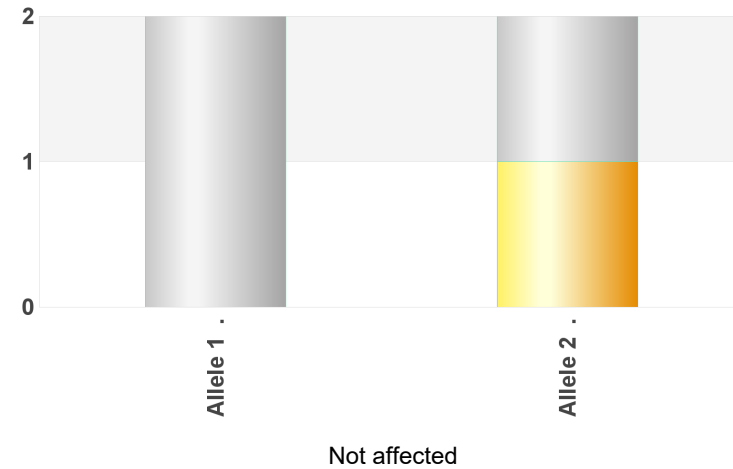
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## Inheritance Probabilities

### 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

<b>Allele:</b>	One of two or more alternative forms of a gene that arise by mutation and are found at the same place on a chromosome.
<b>Alleles: Heterozygous vs. Homozygous?</b>	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).
<b>Gene:</b>	A unit of heredity that is transferred from a parent to offspring and is thought to determine some characteristic of the offspring.
<b>Genotype:</b>	The genetic constitution or make up of an individual organism.
<b>Heterozygous:</b>	A pair of genes which are different (not the same). One is typically dominant and one recessive.
<b>Homozygous:</b>	A pair of genes that are identical (of one type).
<b>Phenotype:</b>	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!