



VETERINARY GENETICS LABORATORY
 SCHOOL OF VETERINARY MEDICINE
 ONE SHIELDS AVENUE
 DAVIS, CALIFORNIA 95616-8744

TELEPHONE: (530) 752-2211
 FAX: (530) 752-3556

AQHA COAT COLOR PANEL TEST RESULTS

AMERICAN QUARTER HORSE ASSOCIATION P.O. BOX 200 AMARILLO, TX 79168-0001	Case: QHA53328 Date Received: 16-Apr-2012 Report Date: 10-May-2012 Report ID: 7590-0920-2152-6015 Verify report at https://www.vgl.ucdavis.edu/myvgl/verify.html
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Horse: DUN GOIN STEADY YOB: 03 Breed: QH Sex: S Alt. ID: 5074922 Sire: ROCKED AND STEADY Dam: SPRING ROCK GOLD	Reg: 4330283 Reg: 3285454 Reg: 3410186
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RED FACTOR	E/E	
AGOUTI	A/A	No red factor detected. Horse cannot have red foals regardless of the color of mate. Basic color is black, bay or brown in the absence of other modifying genes.
CREAM DILUTION	N/Cr	Black pigment distributed in points pattern. Basic color is bay or brown in the absence of other modifying genes.
PEARL DILUTION	N/N	Heterozygous, dilute, one copy of Cream gene. Typical colors are palomino, buckskin and smoky black in the absence of other modifying genes.
SILVER DILUTION	N/N	No evidence of the altered sequence detected.
LETHAL WHITE OVERO	N/N	No evidence of the altered sequence detected.
SABINO 1	N/N	No evidence of the altered sequence detected.
TOBIANO	N/N	No evidence of altered sequence detected. Horse is not Tobiano.
CHAMPAGNE	N/N	No evidence of altered sequence detected.
SPLASHED WHITE SW-1	N/N	No evidence of altered sequence detected.
SPLASHED WHITE SW-2	N/N	No copies of SW-1 mutation.
SPLASHED WHITE SW-3	N/N	No copies of SW-2 mutation.
GRAY	N	No copies of SW-3 mutation.
DUN	D/N	Gray gene is absent. Horse will not turn gray.
		Horse has one copy of the Dun gene. Horse will transmit Dun gene to 50% of the offspring.



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AQHA GENETIC DISEASE PANEL TEST RESULTS

AMERICAN QUARTER HORSE ASSOCIATION P.O. BOX 200 AMARILLO, TX 79168-0001		Case: QHA84614 Date Received: 07-Jan-2013 Report Date: 14-Jan-2013 Report ID: 3829-1490-2789-2019 Verify report at https://www.vgl.ucdavis.edu/myvgl/verify.html
Horse: DUN GOIN STEADY YOB: 03 Breed: QH Sex: S		Reg: 4330283 Alt. ID: 5074922
Sire: ROCKED AND STEADY Dam: SPRING ROCK GOLD		Reg: 3285454 Reg: 3410186

GBED	N/N	N/N - Normal - Does not possess the disease-causing GBED gene
HERDA	N/N	N/N - Normal - horse does not have the HERDA gene
HYPP	N/N	N/N - Normal - Does not possess the disease-causing HYPP gene
MH	N/N	N/N - Normal - horse does not have the MH gene
PSSM1	N/N	N/N - Normal - horse does not have the PSSM1 gene

GBED - Glycogen Branching Enzyme Deficiency. Fatal disease of newborn foals caused by defect in glycogen storage. Affects heart and skeletal muscles and brain. Inherited as recessive disease.

HERDA - Hereditary Equine Regional Dermal Asthenia. Skin disease characterized by hyperextensible skin, scarring, and severe lesions along the back of affected horses. Typical onset is around 2 years of age. Inherited as a recessive disease.

HYPP - Hyperkalemic Periodic Paralysis. Muscle disease caused by defect in sodium channel gene that causes involuntary muscle contraction and increased level of potassium in blood. Inherited as dominant disease. Two copies of defective gene produce more severe signs than one copy.

MH - Malignant Hyperthermia. Rare but life-threatening skeletal muscle disease triggered by exposure to volatile anesthetics (halothane), depolarizing muscle relaxants (succinylcholine), and stress. Presumed inheritance as dominant disease.

PSSM1 - Polysaccharide Storage Myopathy Type 1. Muscle disease characterized by accumulation of abnormal complex sugars in skeletal muscles. Signs include muscle pain, stiffness, skin twitching, sweating, weakness and reluctance to move. Inherited as a dominant disease.

GBED testing performed under a license agreement with the University of Minnesota.
 HERDA testing performed under a license agreement with the University of California, Davis.
 PSSM1 testing performed under a license agreement with the American Quarter Horse Association.

Horse Coat Color Results with Explanations

Red Factor

e/e - Only the red factor detected. Basic color is sorrel or chestnut in the absence of other modifying genes.

E/e - Both black and red factors detected. Either E or e transmitted to offspring. Basic color is black, bay or brown in the absence of other modifying genes.

E/E - No red factor detected. Horse cannot have red foals regardless of the color of mate. Basic color is black, bay or brown in the absence of other modifying genes.

Agouti

A/A - Black pigment distributed in points pattern. Basic color is bay or brown in the absence of other modifying genes.

A/a - Black pigment distributed in points pattern. Basic color is bay or brown in the absence of other modifying genes.

a/a - Only recessive allele detected. Black pigment distributed uniformly. Basic color is black in the absence of other modifying genes.

Cream

N/N - No evidence for the Cream dilution altered sequence detected. Basic color is sorrel or chestnut, bay or black in the absence of other modifying genes.

N/Cr - Heterozygous, dilute, one copy of Cream gene. Typical colors are palomino, buckskin and smoky black in the absence of other modifying genes.

Cr/Cr - Double dilute (two copies of Cream gene). Typical colors are cremello, perlino and smoky cream in the absence of other modifying genes.

Pearl

N/N - No evidence of the altered sequence detected.

N/Prl - One copy of the altered sequence detected. If Cream dilution is also present, a pseudo-double Cream dilute phenotype will result.

Prl/Prl - Two copies of the altered sequence detected. On a chestnut base color, a uniform apricot color of body hair, mane and tail will result.

Tobiano

N/N - No evidence of altered sequence detected. Horse is not Tobiano.

N/TO - One copy of altered sequence. Approximately 50% of the offspring will inherit Tobiano.

TO/TO - Two copies of altered sequence. Horse is homozygous for Tobiano. All offspring will inherit Tobiano.

Dominant White

N/N - No evidence of altered sequence detected.

N/W10 - One copy of the W10 mutation detected. Horse will display some degree of white spotting but the specific pattern cannot be predicted.

W10/W10 - Two copies of the W10 gene detected.*

* Homozygous W10/W10 horses may not be viable. This result may only be found in aborted fetuses produced in matings between two W10 carriers.

Silver

N/N - No evidence of the altered sequence detected.

N/Z - One copy of the altered sequence detected. Black-based horses will be chocolate with flaxen or lightened mane and tail. Bay-based horses will have lightened black pigment on lower legs, mane and tail. No effect on chestnut color.

Z/Z - Two copies of altered sequence detected. Black-based horses will be chocolate with flaxen or lightened mane and tail. Bay-based horses will have lightened black pigment on lower legs, mane and tail. No effect on chestnut color.

Lethal White Overo

N/N - No evidence for the altered sequence detected.

N/O - One copy of the altered sequence detected. If bred to another N/O horse, there is a 25% chance of producing a lethal white overo foal. The N/O type has been detected in Paints (including breeding stock), Pintos, Thoroughbreds, Miniatures, Quarter Horses and Tennessee Walking Horses.

O/O - Only the altered sequence in the EDNRB gene detected. This result has only been obtained with samples from lethal white overo foals.

Sabino 1

N/N - No evidence of altered sequence detected.

N/SB1 - One copy of the Sabino 1 gene detected. Horse typically may have 2 or more white legs, blaze, spots or roaning in the midsection and jagged margins around white areas.

SB1/SB1 - Two copies of the Sabino 1 gene detected. Complete or nearly complete white phenotype expected.

Champagne

N/N - No evidence of altered sequence detected.

N/Ch - One copy of the altered sequence detected. Chestnut color (red) is diluted to gold, bay to tan with brown points and black to darker tan with brown points.

Ch/Ch - Two copies of the altered sequence detected. All offspring are expected to be Champagne diluted.

Gray

N/N - No copies of the gray gene. Horse will not turn gray.

N/G - One copy of the gray gene. Horse will turn gray and approximately 50% of offspring will be gray.

G/G - Two copies of the gray gene. Horse will turn gray and all offspring will be gray.

Splashed White

SW-1

N/N - No copies of SW-1 mutation.

N/SW1 - Horse has one copy of the SW-1 mutation.

SW1/SW1 - Horse has two copies of the SW-1 mutation.

SW-2

N/N - No copies of SW-2 mutation.

N/SW2 - Horse has one copy of the SW-2 mutation.

SW-3

N/N - No copies of SW-3 mutation.

N/SW3 - Horse has one copy of the SW-3 mutation.