

Color Name	Extension	Agouti	Dun	Cream	Roan	Silver	Champagne	Pearl	NOTES
									Codes showing a - mark following the gene indicate that the gene is a simple dominant and looks the same visually in both homozygous and heterozygous form. (example D- could be either DD or Dd; both look the same)
Red Base Colors									<i>Agouti and Silver genes do not express on red based horses; testing is required to determine those alleles</i>
Red (Chestnut/Sorrel)	ee	--	nn	nn	nn	--	nn	nn	Chestnut and sorrel are genetically the same
Red Dun	ee	--	D-	nn	nn	--	nn	nn	
Palomino	ee	--	nn	Cr cr	nn	--	nn	nn	
Cremello	ee	--	nn	CrCr	nn	--	nn	nn	Can look the same as cremello or perlino, requires testing; including all double dilutes with additional modifiers
Red Roan	ee	--	nn	nn	Rn -	--	nn	nn	
Gold Champagne	ee	--	nn	nn	nn	--	Ch -	nn	
Palomino Dun (Dunalino)	ee	--	D-	Cr cr	nn	--	nn	nn	
Palomino Roan	ee	--	nn	Cr cr	Rn -	--	nn	nn	
Gold Cream	ee	--	nn	Cr cr	nn	--	Ch -	nn	
Cremello Dun	ee	--	D-	CrCr	nn	--	nn	nn	
Cremello Roan	ee	--	nn	CrCr	Rn -	--	nn	nn	
Gold Double Cream	ee	--	nn	CrCr	nn	--	Ch -	nn	
Red Roan Dun	ee	--	D-	nn	Rn -	--	nn	nn	
Palomino Dun Roan (Dunalino Roan)	ee	--	D-	Cr cr	Rn -	--	nn	nn	
Cremello Roan Dun	ee	--	D-	CrCr	Rn -	--	nn	nn	
Gold Champagne Dun	ee	--	D-	nn	nn	--	Ch -	nn	
Gold Cream Dun	ee	--	D-	Cr cr	nn	--	Ch -	nn	
Gold Double Cream Dun	ee	--	D-	CrCr	nn	--	Ch -	nn	
Gold Champagne Roan	ee	--	nn	nn	Rn -	--	Ch -	nn	
Gold Cream Roan	ee	--	nn	Cr cr	Rn -	--	Ch -	nn	
Gold Double Cream Roan	ee	--	nn	CrCr	Rn -	--	Ch -	nn	
Gold Champagne Dun Roan	ee	--	D-	nn	Rn -	--	Ch -	nn	
Gold Cream Dun Roan	ee	--	D-	Cr cr	Rn -	--	Ch -	nn	
Gold Double Cream Dun Roan	ee	--	D-	CrCr	Rn -	--	Ch -	nn	
Red Pearl	ee	--	nn	nn	nn	--	nn	pr/pr	Pearl is only expressed in homozygous recessive form, or in conjunction with cream.
Red Dun Pearl	ee	--	D-	nn	nn	--	nn	pr/pr	
Palomino Pearl	ee	--	nn	Cr/pr	nn	--	nn	Cr/pr	Cream and Pearl are mutations of the same locus, so occupy the same location.
Red Roan Pearl	ee	--	nn	nn	Rn -	--	nn	pr/pr	
Gold Champagne Pearl	ee	--	nn	nn	nn	--	Ch -	pr/pr	
Palomino Dun Pearl	ee	--	D-	Cr/pr	nn	--	nn	Cr/pr	May also be called Dunalino Pearl
Palomino Roan Pearl	ee	--	nn	Cr/pr	Rn -	--	nn	Cr/pr	
Gold Cream Pearl	ee	--	nn	Cr/pr	nn	--	Ch -	Cr/pr	
Red Roan Dun Pearl	ee	--	D-	nn	Rn -	--	nn	pr/pr	
Palomino Dun Roan Pearl	ee	--	D-	Cr/pr	Rn -	--	nn	Cr/pr	May also be called Dunalino Roan Pearl
Gold Champagne Dun Pearl	ee	--	D-	nn	nn	--	Ch -	pr/pr	
Gold Cream Dun Pearl	ee	--	D-	Cr/pr	nn	--	Ch -	Cr/pr	
Gold Champagne Roan Pearl	ee	--	nn	nn	Rn -	--	Ch -	pr/pr	
Gold Cream Roan Pearl	ee	--	nn	Cr/pr	Rn -	--	Ch -	Cr/pr	
Gold Champagne Dun Roan Pearl	ee	--	D-	nn	Rn -	--	Ch -	pr/pr	
Gold Cream Dun Roan Pearl	ee	--	D-	Cr/pr	Rn -	--	Ch -	Cr/pr	
Bay Base Colors									<i>At this time Bay and Brown (seal brown) can not be differentiated from genetically, though show different visual phenotypes, so are shown with a slash mark, but listed together, as they test the same.</i>
Bay/Brown	E-	A-	nn	nn	nn	nn	nn	nn	
Bay/Brown Dun	E-	A-	D-	nn	nn	nn	nn	nn	Often called just Dun
Buckskin/Smoky Brown	E-	A-	nn	Cr cr	nn	nn	nn	nn	

Perlino	E-	A-	nn	CrCr	nn	nn	nn	nn	Can look the same as cremello or smoky cream, requires testing; including all double dilutes with additional modifiers
Bay/Brown Roan	E-	A-	nn	nn	Rn -	nn	nn	nn	
Silver Bay/Brown	E-	A-	nn	nn	nn	Z-	nn	nn	Called Red Chocolate in some breeds
Amber/Sable Champagne	E-	A-	nn	nn	nn	nn	Ch -	nn	
Buckskin/Smoky Brown Dun (Dunskin)	E-	A-	D -	Cr cr	nn	nn	nn	nn	
Buckskin/Smoky Brown Roan	E-	A-	nn	Cr cr	Rn -	nn	nn	nn	
Amber/Sable Cream	E-	A-	nn	Cr cr	nn	nn	Ch -	nn	
Perlino Dun	E-	A-	D -	CrCr	nn	nn	nn	nn	
Perlino Roan	E-	A-	nn	CrCr	Rn -	nn	nn	nn	
Amber/Sable Double Cream	E-	A-	nn	CrCr	nn	nn	Ch -	nn	
Bay Roan Dun	E-	A-	D -	nn	Rn -	nn	nn	nn	
Buckskin/Smoky Brown Dun Roan (Dunskin Roan)	E-	A-	D -	Cr cr	Rn -	nn	nn	nn	
Perlino Roan Dun	E-	A-	D -	CrCr	Rn -	nn	nn	nn	
Amber/Sable Dun	E-	A-	D -	nn	nn	nn	Ch -	nn	
Amber/Sable Cream Dun	E-	A-	D -	Cr cr	nn	nn	Ch -	nn	
Amber/Sable Double Cream Dun	E-	A-	D -	CrCr	nn	nn	Ch -	nn	
Amber/Sable Roan	E-	A-	nn	nn	Rn -	nn	Ch -	nn	
Amber/Sable Cream Roan	E-	A-	nn	Cr cr	Rn -	nn	Ch -	nn	
Amber/Sable Double Cream Roan	E-	A-	nn	CrCr	Rn -	nn	Ch -	nn	
Amber/Sable Dun Roan	E-	A-	D -	nn	Rn -	nn	Ch -	nn	
Amber/Sable Cream Dun Roan	E-	A-	D -	Cr cr	Rn -	nn	Ch -	nn	
Amber/Sable Double Cream Dun Roan	E-	A-	D -	CrCr	Rn -	nn	Ch -	nn	
Silver Buckskin/Smoky Brown	E-	A-	nn	Cr cr	nn	Z-	nn	nn	
Silver Perlino	E-	A-	nn	CrCr	nn	Z-	nn	nn	
Silver Bay/Brown Dun	E-	A-	D -	nn	nn	Z-	nn	nn	
Silver Buckskin/Smoky Brown Dun (Silver Dunskin)	E-	A-	D -	Cr cr	nn	Z-	nn	nn	
Silver Perlino Dun	E-	A-	D -	CrCr	nn	Z-	nn	nn	
Silver Bay/Brown Roan	E-	A-	nn	nn	Rn -	Z-	nn	nn	
Silver Buckskin/Smoky Brown Roan	E-	A-	nn	Cr cr	Rn -	Z-	nn	nn	
Silver Perlino Roan	E-	A-	nn	CrCr	Rn -	Z-	nn	nn	
Silver Amber/Sable	E-	A-	nn	nn	nn	Z-	Ch -	nn	
Silver Amber/Sable Cream	E-	A-	nn	Cr cr	nn	Z-	Ch -	nn	
Silver Amber/Sable Double Cream	E-	A-	nn	CrCr	nn	Z-	Ch -	nn	
Silver Bay/Brown Dun Roan	E-	A-	D -	nn	Rn -	Z-	nn	nn	
Silver Buckskin Dun Roan (Silver Dunskin Roan)	E-	A-	D -	Cr cr	Rn -	Z-	nn	nn	
Silver Perlino Dun Roan	E-	A-	D -	CrCr	Rn -	Z-	nn	nn	
Silver Amber/Sable Champagne Dun Roan	E-	A-	D -	nn	Rn -	Z-	Ch -	nn	
Silver Amber/Sable Cream Dun Roan	E-	A-	D -	Cr cr	Rn -	Z-	Ch -	nn	
Silver Amber/Sable Double Cream Dun Roan	E-	A-	D -	CrCr	Rn -	Z-	Ch -	nn	
Bay/Brown Pearl	E-	A-	nn	nn	nn	nn	nn	pri pri	Pearl is only expressed in homozygous recessive form, or in conjunction with cream.
Bay/Brown Dun Pearl	E-	A-	D -	nn	nn	nn	nn	pri pri	
Buckskin/Smoky Brown Pearl	E-	A-	nn	Cr/pri	nn	nn	nn	Cr/pri	Cream and Pearl are mutations of the same locus, so occupy the same location.
Bay/Brown Roan Pearl	E-	A-	nn	nn	Rn -	nn	nn	pri pri	
Silver Bay/Brown Pearl	E-	A-	nn	nn	nn	Z-	nn	pri pri	
Amber/Sable Champagne Pearl	E-	A-	nn	nn	nn	nn	Ch -	pri pri	
Buckskin/Smoky Brown Dun Pearl	E-	A-	D -	Cr/pri	nn	nn	nn	Cr/pri	May also be called Dunskin Pearl
Buckskin/Smoky Brown Roan Pearl	E-	A-	nn	Cr/pri	Rn -	nn	nn	Cr/pri	
Amber/Sable Cream Pearl	E-	A-	nn	Cr/pri	nn	nn	Ch -	Cr/pri	
Bay Roan Dun Pearl	E-	A-	D -	nn	Rn -	nn	nn	pri pri	
Buckskin/Smoky Brown Dun Roan Pearl	E-	A-	D -	Cr/pri	Rn -	nn	nn	Cr/pri	May also be called Dunskin Roan Pearl
Amber/Sable Dun Pearl	E-	A-	D -	nn	nn	nn	Ch -	pri pri	
Amber/Sable Cream Dun Pearl	E-	A-	D -	Cr/pri	nn	nn	Ch -	pri pri	
Amber/Sable Roan Pearl	E-	A-	nn	nn	Rn -	nn	Ch -	pri pri	

Amber/Sable Cream Roan Pearl	E-	A-	nn	Cr/prl	Rn -	nn	Ch -	Cr/prl	
Amber/Sable Dun Roan Pearl	E-	A-	D -	nn	Rn -	nn	Ch -	prl/prl	
Amber/Sable Cream Dun Roan Pearl	E-	A-	D -	Cr/prl	Rn -	nn	Ch -	Cr/prl	
Silver Buckskin/Smoky Brown Pearl	E-	A-	nn	Cr/prl	nn	Z-	nn	Cr/prl	
Silver Bay/Brown Dun Pearl	E-	A-	D -	nn	nn	Z-	nn	prl/prl	
Silver Buckskin/Smoky Brown Dun Pearl	E-	A-	D -	Cr/prl	nn	Z-	nn	Cr/prl	May also be called Silver Dunskin Pearl
Silver Bay/Brown Roan Pearl	E-	A-	nn	nn	Rn -	Z-	nn	prl/prl	
Silver Buckskin/Smoky Brown Roan Pearl	E-	A-	nn	Cr/prl	Rn -	Z-	nn	Cr/prl	
Silver Amber/Sable Pearl	E-	A-	nn	nn	nn	Z-	Ch -	prl/prl	
Silver Amber/Sable Cream Pearl	E-	A-	nn	Cr/prl	nn	Z-	Ch -	Cr/prl	
Silver Bay/Brown Dun Roan Pearl	E-	A-	D -	nn	Rn -	Z-	nn	prl/prl	
Silver Buckskin Dun Roan Pearl	E-	A-	D -	Cr/prl	Rn -	Z-	nn	Cr/prl	May also be called Silver Dunskin Roan Pearl
Silver Amber/Sable Champagne Dun Roan Pearl	E-	A-	D -	nn	Rn -	Z-	Ch -	prl/prl	
Silver Amber/Sable Cream Dun Roan Pearl	E-	A-	D -	Cr/prl	Rn -	Z-	Ch -	Cr/prl	

<u>Black Base Colors</u>									
Black	E-	aa	nn	nn	nn	nn	nn	nn	Can visually appear the same as a black horse with cream (smoky black)
Grullo (Black Dun)	E-	aa	D -	nn	nn	nn	nn	nn	Can visually appear the same as a black horse with cream (smoky grullo)
Smoky Black	E-	aa	nn	Cr cr	nn	nn	nn	nn	Can look the same as a black horse without cream
Smoky Cream	E-	aa	nn	CrCr	nn	nn	nn	nn	Can look the same as cremello or perlino, requires testing; including all double dilutes with additional modifiers
Blue Roan (Black Roan)	E-	aa	nn	nn	Rn -	nn	nn	nn	Can visually appear the same as a black horse with cream (smoky black roan)
Silver Black	E-	aa	nn	nn	nn	Z-	nn	nn	Can be called Silver Dapple, Chocolate or Taffy in some regions and breeds
Classic Champagne	E-	aa	nn	nn	nn	nn	Ch -	nn	
Smoky Grullo	E-	aa	D -	Cr cr	nn	nn	nn	nn	Can look the same as a black horse without cream (grullo)
Smoky Black Roan	E-	aa	nn	Cr cr	Rn -	nn	nn	nn	Can look the same as a black horse without cream (blue roan)
Classic Cream	E-	aa	nn	Cr cr	nn	nn	Ch -	nn	
Smoky Cream Dun	E-	aa	D -	CrCr	nn	nn	nn	nn	
Smoky Cream Roan	E-	aa	nn	CrCr	Rn -	nn	nn	nn	
Classic Double Cream	E-	aa	nn	CrCr	nn	nn	Ch -	nn	
Grullo Roan	E-	aa	D -	nn	Rn -	nn	nn	nn	Can look the same as a black horse without cream (smoky grullo roan)
Smoky Grullo Roan	E-	aa	D -	Cr cr	Rn -	nn	nn	nn	Can look the same as a black horse without cream (grullo roan)
Smoky Cream Roan Dun	E-	aa	D -	CrCr	Rn -	nn	nn	nn	
Classic Grullo	E-	aa	D -	nn	nn	nn	Ch -	nn	
Classic Smoky Grullo	E-	aa	D -	Cr cr	nn	nn	Ch -	nn	
Classic Double Cream Dun	E-	aa	D -	CrCr	nn	nn	Ch -	nn	
Classic Champagne Roan	E-	aa	nn	nn	Rn -	nn	Ch -	nn	
Classic Cream Roan	E-	aa	nn	Cr cr	Rn -	nn	Ch -	nn	
Classic Double Cream Roan	E-	aa	nn	CrCr	Rn -	nn	Ch -	nn	
Classic Grullo Roan	E-	aa	D -	nn	Rn -	nn	Ch -	nn	
Classic Smoky Grullo Roan	E-	aa	D -	Cr cr	Rn -	nn	Ch -	nn	
Classic Double Cream Dun Roan	E-	aa	D -	CrCr	Rn -	nn	Ch -	nn	
Silver Smoky Black	E-	aa	nn	Cr cr	nn	Z-	nn	nn	Often shows less dilution to mane and tail than silver black without cream
Silver Smoky Cream	E-	aa	nn	CrCr	nn	Z-	nn	nn	
Silver Grullo	E-	aa	D -	nn	nn	Z-	nn	nn	
Silver Smoky Grullo	E-	aa	nn	Cr cr	nn	Z-	nn	nn	
Silver Smoky Cream Dun	E-	aa	D -	CrCr	nn	Z-	nn	nn	
Silver Black Roan	E-	aa	nn	nn	Rn -	Z-	nn	nn	
Silver Smoky Black Roan	E-	aa	nn	Cr cr	Rn -	Z-	nn	nn	
Silver Smoky Cream Roan	E-	aa	nn	CrCr	Rn -	Z-	nn	nn	
Silver Classic Champagne	E-	aa	nn	nn	nn	Z-	Ch -	nn	
Silver Classic Cream	E-	aa	nn	Cr cr	nn	Z-	Ch -	nn	

Silver Classic Double Cream	E-	aa	nn	CrCr	nn	Z-	Ch-	nn	
Silver Grullo Roan	E-	aa	D-	nn	Rn-	Z-	nn	nn	
Silver Smoky Grullo Roan	E-	aa	D-	Cr cr	Rn-	Z-	nn	nn	
Silver Smoky Cream Dun Roan	E-	aa	D-	CrCr	Rn-	Z-	nn	nn	
Silver Classic Grullo Roan	E-	aa	D-	nn	Rn-	Z-	Ch-	nn	
Silver Classic Smoky Grullo Roan	E-	aa	D-	Cr cr	Rn-	Z-	Ch-	nn	
Silver Classic Double Cream Dun Roan	E-	aa	D-	CrCr	Rn-	Z-	Ch-	nn	
Black Pearl	E-	aa	nn	nn	nn	nn	nn	prl prl	Pearl is only expressed in homozygous recessive form, or in conjunction with cream.
Grullo Pearl	E-	aa	D-	nn	nn	nn	nn	prl prl	
Smoky Black Pearl	E-	aa	nn	Cr/prl	nn	nn	nn	Cr/prl	Cream and Pearl are mutations of the same locus, so occupy the same location.
Black Roan Pearl	E-	aa	nn	nn	Rn-	nn	nn	prl prl	
Silver Black Pearl	E-	aa	nn	nn	nn	Z-	nn	prl prl	
Classic Champagne Pearl	E-	aa	nn	nn	nn	nn	Ch-	prl prl	
Smoky Grullo Pearl	E-	aa	D-	Cr/prl	nn	nn	nn	Cr/prl	
Smoky Black Roan Pearl	E-	aa	nn	Cr/prl	Rn-	nn	nn	Cr/prl	
Classic Cream Pearl	E-	aa	nn	Cr/prl	nn	nn	Ch-	Cr/prl	
Grullo Roan Pearl	E-	aa	D-	nn	Rn-	nn	nn	prl prl	
Smoky Grullo Roan Pearl	E-	aa	D-	Cr/prl	Rn-	nn	nn	Cr/prl	
Classic Grullo Pearl	E-	aa	D-	nn	nn	nn	Ch-	prl prl	
Classic Smoky Grullo Pearl	E-	aa	D-	Cr/prl	nn	nn	Ch-	prl prl	
Classic Champagne Roan Pearl	E-	aa	nn	nn	Rn-	nn	Ch-	prl prl	
Classic Cream Roan Pearl	E-	aa	nn	Cr/prl	Rn-	nn	Ch-	Cr/prl	
Classic Grullo Roan Pearl	E-	aa	D-	nn	Rn-	nn	Ch-	prl prl	
Classic Smoky Grullo Roan Pearl	E-	aa	D-	Cr/prl	Rn-	nn	Ch-	Cr/prl	
Silver Smoky Black Pearl	E-	aa	nn	Cr/prl	nn	Z-	nn	Cr/prl	
Silver Grullo Pearl	E-	aa	D-	nn	nn	Z-	nn	prl prl	
Silver Smoky Grullo Pearl	E-	aa	D-	Cr/prl	nn	Z-	nn	Cr/prl	
Silver Black Roan Pearl	E-	aa	nn	nn	Rn-	Z-	nn	prl prl	
Silver Smoky Black Roan Pearl	E-	aa	nn	Cr/prl	Rn-	Z-	nn	Cr/prl	
Silver Classic Champagne Pearl	E-	aa	nn	nn	nn	Z-	Ch-	prl prl	
Silver Classic Cream Pearl	E-	aa	nn	Cr/prl	nn	Z-	Ch-	Cr/prl	
Silver Grullo Roan Pearl	E-	aa	D-	nn	Rn-	Z-	nn	prl prl	
Silver Smoky Grullo Roan Pearl	E-	aa	D-	Cr/prl	Rn-	Z-	nn	Cr/prl	
Silver Classic Grullo Roan Pearl	E-	aa	D-	nn	Rn-	Z-	Ch-	prl prl	
Silver Classic Smoky Grullo Roan Pearl	E-	aa	D-	Cr/prl	Rn-	Z-	Ch-	Cr/prl	

Additional Notes: The Gray gene has been omitted from these charts. Any horse testing Gray (GG or Gg) will gradually gray out (turn progressively more white) over time. Once a horse starts into the graying process the original base color can not be determined.

Pattern Genes:		Patterns may occur on any base color above.
Tobiano	T-	Simple Dominant, appears the same in heterozygous and homozygous forms
Frame Overo (Lethal White Overo)	O/n	O/O results in a lethal white foal, which will die within 72 hours due to incomplete digestive tract; heterozygous form may be minimal and the gene can be found in many breeds outside of paints. Testing of all breeding stock is recommended.
Splash White 1	SW1-	Incomplete dominant; horses that are homozygous show more white than those that are heterozygous; Homozygous usually puts extensive white on bottom half of the body and a large blaze or bald face. Often associated with blue eyes.
Splash White 2	SW2/h	Believed to be embryonic lethal; Can be traced back to the founder Katie Gun
Splash White 3	SW3/h	Believed to be embryonic lethal; Can be traced back to the founder TD Kidd
Sabino	Sb1-	Incomplete dominant; horses that are homozygous are generally nearly all white, heterozygous variable amount of white
White Spotting 1-21	W 1-21	Twenty-one presently known white spotting genes that have been added to the W series. Most are specific to certain families of horses with a known founder, though a few genes, like W20, have now been found in many breeds. It is highly likely that more g

Leopard Complex	Lp-	Causes appaloosa characteristics (though not limited to the appaloosa breed); Homozygous results in few spots, snow cap or varnish; heterozygous results in leopard, blanket, or varnish.
Pattern 1	Patn1-	When combined with Lp may produce leopard, near leopard or few spots; solid horses may carry the gene, but to no visual effect until combined with Lp.
Non-dun 1	nd1-	Non-dun 1 horses often show primitive type markings, but lack body dilution of a normal dun
Non-dun 2	nd2-	Non-dun 2 horses usually do not show primitive type markings, and also lack body dilution of a normal dun; often times indistinguishable from horses not carrying the gene.

This document was created by Cathy Sheeter in Feb. 2016; The field of equine color genetics is constantly evolving and likely that new mutations will continue to be discovered every year, but is current as of this date to the best of my knowledge. This document may be shared or printed freely for educational, non-commercial uses.