



GENETIC COAT COLOUR ANALYSIS (243)



Report #:	4308085	Request Date:	16/11/2021
Sample ID:	EQ-AAX5260	Analysis start date:	24/11/2021
Type of Sample:	Blood	Analysis finish date:	29/11/2021

Horse

Name:	ZAFIRO SALAZAR	UEN:	724015200353869
Microchip:	10010000724100006011451	Sex:	Male

Methodology

This study analyses the two genes responsible for the type and location of the pigment (Extension and Agouti), the dilution factors for Cream and Pearl, and the gene responsible for the Grey coat colour. PCR for the specific regions for each marker and polymorphism analysis (PL03) is used for this study.

Results

Genetic Formula (Genotype)
ggAaEECCrNPrl

Genetic coat colour*
Buckskin Pearl
(prev. Perlina)

* In addition to the said genes, there are others that have not been contemplated in this study, and that could alter the phenotype. Coat colours were updated as of 11/03/2020. For those names that have changed, the former name appears in parenthesis.

Analyzing Descendants

The horse analyzed, based on its genotype and the genotype it is crossed with, and without taking into account other genes involved in coat colour, could have progeny with the following coat colours:

- | | | | | |
|--|---|---|---|---|
| <input checked="" type="checkbox"/> Black | <input checked="" type="checkbox"/> Smokey Black | <input checked="" type="checkbox"/> Smokey Cream | <input checked="" type="checkbox"/> Smokey Pearl | <input checked="" type="checkbox"/> Black Double-Pearl |
| <input checked="" type="checkbox"/> Bay | <input checked="" type="checkbox"/> Buckskin | <input checked="" type="checkbox"/> Perlina | <input checked="" type="checkbox"/> Buckskin Pearl | <input checked="" type="checkbox"/> Bay Double-Pearl |
| <input type="checkbox"/> Chestnut | <input type="checkbox"/> Palomino | <input type="checkbox"/> Cremella | <input type="checkbox"/> Palomino Pearl | <input type="checkbox"/> Chestnut Double-Pearl |
| <input checked="" type="checkbox"/> Grey | | | | |

Monday, 29 November 2021
Ismael M. González Berraquero
Laboratory manager

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Changes in Coat Colour Names

There have been the following changes in Coat Colour Names *:

GENOTYPES	PREVIOUS NAME	CURRENT NAME
Horses with a base colour of Bay with double Cream dilution genes (ggA_E_CrCrNN)**	Pearl	Perlina
Horses with a base colour of Bay with Cream and Pearl dilution genes (ggA_E_CCrNPrl)	Perlina	Buckskin Pearl
Horses with a base colour of Chestnut with Cream and Pearl dilution genes (gg_eeCCrNPrl)	Perlina	Palomino Pearl
Horses with a base colour of Black with Cream and Pearl dilution genes (ggaaE_CCrNPrl)	Perlina	Smokey Pearl
Horses with a base colour of Bay with double Pearl dilution genes (ggA_E_CCPrlPrI)	Isabella	Bay Double-Pearl
Horses with a base colour of Chestnut with double Pearl dilution genes (gg eeCCPrIPrI)	Isabella	Chestnut Double-Pearl
Horses with a base colour of Black with double Pearl dilution genes (ggaaE_CCPrlPrI)	Isabella	Black Double-Pearl

* All other coat colours retain their names.

** A_ = AA or Aa / E_ = EE or Ee

APPENDIX I: Genes Involved in determining the coat colour

GENE	EXAMPLE	PROGENY
Grey	GG	The horse will be Grey, independently of the rest of the genetic formula. The loss of pigment and progression towards a white coat is much faster.
	Gg	Pigmentation is masked. The horse will be Grey regardless of the rest of the genetic formula. The lightening process is less consistent and re-pigmentation speckles (flea-bitten) are more likely to appear.
	gg	Pigmentation is not masked. The horse will be phenotypically NOT GREY, presenting the coat colour (phenotype) determined by the rest of the genes making up the genetic formula (genotype).
Extension	EE	Black pigmentation is produced in areas which are not restricted by the Agouti gene. In the absence of "diluted genes" (CCr or CrCr, for example), the horse could be Bay or Black, depending on the location of the pigment.
	Ee	Black pigmentation is produced in areas which are not restricted by the Agouti gene. In the absence of "diluted genes" (CCr or CrCr, for example), the horse could be Bay or Black depending on the location of the pigments.
	ee	Only produces red pigment. A Chestnut horse in absence of diluting genes (CCr or CrCr, for example).
Agouti	AA	The presence of "A" restricts Black pigment to manes, tails and lower-legs. The horse will be Bay if and when it produces Black pigment (EE or Ee) and when diluted genes are absent (CCr and CrCr, for example).
	Aa	The presence of "A" restricts Black pigment to manes, tails and lower-legs. The horse will be Bay if and when it produces Black pigment (EE or Ee) and when diluted genes are absent (CCr and CrCr, for example).
	aa	Black pigment is distributed all over the body. The horse will always be Black when Black pigment is produced (EE or Ee) and in the absence of diluted genes (CCr and CrCr, for example).

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APPENDIX I: Genes Involved in determining the coat colour

GENE		EXAMPLE	PROGENY
Cream - Pearl	CC NN	There is no colour dilution. The horse will be Bay, Chestnut or Black, depending on basic coat colour and in the absence of other dilution genes.	Does not contribute dilution genes to its progeny.
	CCr NN	There is a simple colour dilution. The horse will be Buckskin, Palomino or Smokey Black, depending on the basic coat colour and in the absence of other dilution genes.	50% of all progeny will have the Cream dilution allele.
	CrCr NN	There is a double colour dilution. The horse will be Perlino, Cremello or Smokey Cream, depending on the basic coat colour and in the absence of other dilution genes.	All progeny will have at least one dilution gene and will be Buckskin, Palomino or Smokey Black depending on the basic coat colour, and in the absence of other dilution genes.
	CC NPrI	A copy of the altered sequence has been detected. There is no colour dilution. The horse will be Bay, Chestnut or Black, depending on the basic coat colour and in the absence of other dilution genes.	50% of the progeny will have the Pearl dilution allele.
	CC PrIPrI	Both copies of the sequence are altered. The horse's phenotype is Bay Double-Pearl, Black Double-Pearl, or Chestnut Double-Pearl, depending on the basic coat colour and in the absence of other dilution genes.	All progeny would have at least one dilution gene, thus its phenotype would depend on the presence of other dilution genes.
	CCr NPrI	The horse would have a Buckskin Pearl, Palomino Pearl or Smokey Pearl phenotype, depending on the basic coat colour and the absence of other dilution genes.	50% of the progeny would have the Cream dilution allele while the other 50% would have the Pearl dilution allele.

Two different mutations present in the same gene are studied. These represent different alleles and they are not inherited independently.

APPENDIX II: Basic and Diluted Coat Colours
Basic Coat Colours

Bay, Chestnut and Black: to generate one of these coat colours, the Grey mutation must not be present at either Grey locus and there must not be any Cream or Pearl dilution alleles.

- **Black:** There is at least one allele that produces eumelanin (EE or Ee, symbolized as E_) and no partial pigment accumulation allele at the Agouti locus. The genotype would be aa.
- **Bay:** There is at least one eumelanin production allele (EE or Ee, symbolized as E_) and at least one partial pigment accumulation allele (AA or Aa, symbolized as A_)
- **Chestnut:** the requirement for this coat colour is that there is no eumelanin or black pigment production allele. The genotype would be ee in combination with AA, or Aa, or aa at the Agouti locus.

Diluted Coat Colours

The presence of Cream or Pearl (symbolized as Cr or PrI) dilution factors and their combinations generate the following phenotypes:

- In the absence of Pearl, the Cream dilution in horses that are Bay, Chestnut or Black generate *Buckskin* or *Perlino*, *Palomino* or *Cremello* and *Smokey Black* or *Smokey Cream* respectively.
- The combination of a Cream dilution and a Pearl dilution on Bay, Chestnut or Black horses generates *Buckskin Pearl*, *Palomino Pearl* or *Smokey Pearl*. This phenotype is similar to the one generated by *double Cream dilution*.
- The presence of double Pearl dilution gives rise to *Bay Double-Pearl*, *Chestnut Double-Pearl*, or *Black Double-Pearl* phenotypes.
- In horses with double dilution CrCrNN and CCrNPrI, whose skin is pink, the presence of G alleles may be masked by the extreme lack of pigmentation.
- The presence of multiple dilution factors produces horses with very light coat colours, which are sometimes confused with albinos.

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APPENDIX II: Basic and Diluted Coat Colours

The Extension and Agouti genes together with the Cream and Pearl dilutions combine with each other to generate three basic coat colours and twelve diluted coat colours, as shown in the Figure below. Within each of these coat colours, there are variations that are determined by the additive effect of other dilution genes. The presence of one or two dominant alleles for the gene Grey (Gg or GG), symbolized as G_, changes all colours to grey horses.



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APPENDIX III: Basic prediction for progeny

The following table shows the phenotypes, as well as the proportions for each coat colour expected upon breeding with the horse. In this case, if it breeds with Bay homozygotes Bay, 100% of its progeny will have Bay coats.

ggAAEECCNN	Buckskin	Bay							
	50 %	50 %							
ggAAEECCrNN	Buckskin	Perlino	Bay	Buckskin Pearl					
	25 %	25 %	25 %	25 %					
ggAAEECCNPrl	Buckskin	Bay	Buckskin Pearl	Bay Double-Pe					
	25 %	25 %	25 %	25 %					
ggAAEECCrCrNN	Perlino	Buckskin Pearl							
	50 %	50 %							
ggAAEECCrNPrl	Perlino	Buckskin Pearl	Bay Double-Pe						
	25 %	50 %	25 %						
ggAAEECCPrIPrl	Buckskin Pearl	Bay Double-Pe							
	50 %	50 %							
ggAaEECCNN	Smokey Black	Black	Buckskin	Bay					
	12.5 %	12.5 %	37.5 %	37.5 %					
ggAaEECCrNN	Smokey Black	Smokey Cream	Black	Smokey Pearl	Buckskin	Perlino	Bay	Buckskin Pearl	
	6.25 %	6.25 %	6.25 %	6.25 %	18.75 %	18.75 %	18.75 %	18.75 %	
ggAaEECCNPrl	Smokey Black	Black	Smokey Pearl	Black Double-P	Buckskin	Bay	Buckskin Pearl	Bay Double-Pe	
	6.25 %	6.25 %	6.25 %	6.25 %	18.75 %	18.75 %	18.75 %	18.75 %	
ggAaEECCrCrNN	Smokey Cream	Smokey Pearl	Perlino	Buckskin Pearl					
	12.5 %	12.5 %	37.5 %	37.5 %					
ggAaEECCrNPrl	Smokey Cream	Smokey Pearl	Black Double-P	Perlino	Buckskin Pearl	Bay Double-Pe			
	6.25 %	12.5 %	6.25 %	18.75 %	37.5 %	18.75 %			
ggAaEECCPrIPrl	Smokey Pearl	Black Double-P	Buckskin Pearl	Bay Double-Pe					
	12.5 %	12.5 %	37.5 %	37.5 %					
ggaaEECCNN	Smokey Black	Black	Buckskin	Bay					
	25 %	25 %	25 %	25 %					
ggaaEECCrNN	Smokey Black	Smokey Cream	Black	Smokey Pearl	Buckskin	Perlino	Bay	Buckskin Pearl	
	12.5 %	12.5 %	12.5 %	12.5 %	12.5 %	12.5 %	12.5 %	12.5 %	
ggaaEECCNPrl	Smokey Black	Black	Smokey Pearl	Black Double-P	Buckskin	Bay	Buckskin Pearl	Bay Double-Pe	
	12.5 %	12.5 %	12.5 %	12.5 %	12.5 %	12.5 %	12.5 %	12.5 %	
ggaaEECCrCrNN	Smokey Cream	Smokey Pearl	Perlino	Buckskin Pearl					
	25 %	25 %	25 %	25 %					
ggaaEECCrNPrl	Smokey Cream	Smokey Pearl	Black Double-P	Perlino	Buckskin Pearl	Bay Double-Pe			
	12.5 %	25 %	12.5 %	12.5 %	25 %	12.5 %			
ggaaEECCPrIPrl	Smokey Pearl	Black Double-P	Buckskin Pearl	Bay Double-Pe					
	25 %	25 %	25 %	25 %					
ggAAEeCCNN	Buckskin	Bay							
	50 %	50 %							
ggAAEeCCrNN	Buckskin	Perlino	Bay	Buckskin Pearl					
	25 %	25 %	25 %	25 %					
ggAAEeCCNPrl	Buckskin	Bay	Buckskin Pearl	Bay Double-Pe					
	25 %	25 %	25 %	25 %					
ggAAEeCCrCrNN	Perlino	Buckskin Pearl							
	50 %	50 %							
ggAAEeCCrNPrl	Perlino	Buckskin Pearl	Bay Double-Pe						
	25 %	50 %	25 %						
ggAAEeCCPrIPrl	Buckskin Pearl	Bay Double-Pe							
	50 %	50 %							
ggAaEeCCNN	Smokey Black	Black	Buckskin	Bay					
	12.5 %	12.5 %	37.5 %	37.5 %					

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ggAaEeCCrNN	Smokey Black 6.25 %	Smokey Cream 6.25 %	Black 6.25 %	Smokey Pearl 6.25 %	Buckskin 18.75 %	Perlino 18.75 %	Bay 18.75 %	Buckskin Pearl 18.75 %
ggAaEeCCNPrl	Smokey Black 6.25 %	Black 6.25 %	Smokey Pearl 6.25 %	Black Double-P 6.25 %	Buckskin 18.75 %	Bay 18.75 %	Buckskin Pearl 18.75 %	Bay Double-Pe 18.75 %
ggAaEeCrCrNN	Smokey Cream 12.5 %	Smokey Pearl 12.5 %	Perlino 37.5 %	Buckskin Pearl 37.5 %				
ggAaEeCCrNPrl	Smokey Cream 6.25 %	Smokey Pearl 12.5 %	Black Double-P 6.25 %	Perlino 18.75 %	Buckskin Pearl 37.5 %	Bay Double-Pe 18.75 %		
ggAaEeCCPrPr	Smokey Pearl 12.5 %	Black Double-P 12.5 %	Buckskin Pearl 37.5 %	Bay Double-Pe 37.5 %				
ggaaEeCCNN	Smokey Black 25 %	Black 25 %	Buckskin 25 %	Bay 25 %				
ggaaEeCCrNN	Smokey Black 12.5 %	Smokey Cream 12.5 %	Black 12.5 %	Smokey Pearl 12.5 %	Buckskin 12.5 %	Perlino 12.5 %	Bay 12.5 %	Buckskin Pearl 12.5 %
ggaaEeCCNPrl	Smokey Black 12.5 %	Black 12.5 %	Smokey Pearl 12.5 %	Black Double-P 12.5 %	Buckskin 12.5 %	Bay 12.5 %	Buckskin Pearl 12.5 %	Bay Double-Pe 12.5 %
ggaaEeCrCrNN	Smokey Cream 25 %	Smokey Pearl 25 %	Perlino 25 %	Buckskin Pearl 25 %				
ggaaEeCCrNPrl	Smokey Cream 12.5 %	Smokey Pearl 25 %	Black Double-P 12.5 %	Perlino 12.5 %	Buckskin Pearl 25 %	Bay Double-Pe 12.5 %		
ggaaEeCCPrPr	Smokey Pearl 25 %	Black Double-P 25 %	Buckskin Pearl 25 %	Bay Double-Pe 25 %				
ggAAeeCCNN	Buckskin 50 %	Bay 50 %						
ggAAeeCCrNN	Buckskin 25 %	Perlino 25 %	Bay 25 %	Buckskin Pearl 25 %				
ggAAeeCCNPrl	Buckskin 25 %	Bay 25 %	Buckskin Pearl 25 %	Bay Double-Pe 25 %				
ggAAeeCrCrNN	Perlino 50 %	Buckskin Pearl 50 %						
ggAAeeCCrNPrl	Perlino 25 %	Buckskin Pearl 50 %	Bay Double-Pe 25 %					
ggAAeeCCPrPr	Buckskin Pearl 50 %	Bay Double-Pe 50 %						
ggAaeeCCNN	Smokey Black 12.5 %	Black 12.5 %	Buckskin 37.5 %	Bay 37.5 %				
ggAaeeCCrNN	Smokey Black 6.25 %	Smokey Cream 6.25 %	Black 6.25 %	Smokey Pearl 6.25 %	Buckskin 18.75 %	Perlino 18.75 %	Bay 18.75 %	Buckskin Pearl 18.75 %
ggAaeeCCNPrl	Smokey Black 6.25 %	Black 6.25 %	Smokey Pearl 6.25 %	Black Double-P 6.25 %	Buckskin 18.75 %	Bay 18.75 %	Buckskin Pearl 18.75 %	Bay Double-Pe 18.75 %
ggAaeeCrCrNN	Smokey Cream 12.5 %	Smokey Pearl 12.5 %	Perlino 37.5 %	Buckskin Pearl 37.5 %				
ggAaeeCCrNPrl	Smokey Cream 6.25 %	Smokey Pearl 12.5 %	Black Double-P 6.25 %	Perlino 18.75 %	Buckskin Pearl 37.5 %	Bay Double-Pe 18.75 %		
ggAaeeCCPrPr	Smokey Pearl 12.5 %	Black Double-P 12.5 %	Buckskin Pearl 37.5 %	Bay Double-Pe 37.5 %				
ggaaeeCCNN	Smokey Black 25 %	Black 25 %	Buckskin 25 %	Bay 25 %				
ggaaeeCCrNN	Smokey Black 12.5 %	Smokey Cream 12.5 %	Black 12.5 %	Smokey Pearl 12.5 %	Buckskin 12.5 %	Perlino 12.5 %	Bay 12.5 %	Buckskin Pearl 12.5 %
ggaaeeCCNPrl	Smokey Black 12.5 %	Black 12.5 %	Smokey Pearl 12.5 %	Black Double-P 12.5 %	Buckskin 12.5 %	Bay 12.5 %	Buckskin Pearl 12.5 %	Bay Double-Pe 12.5 %
ggaaeeCrCrNN	Smokey Cream 25 %	Smokey Pearl 25 %	Perlino 25 %	Buckskin Pearl 25 %				
ggaaeeCCrNPrl	Smokey Cream 12.5 %	Smokey Pearl 25 %	Black Double-P 12.5 %	Perlino 12.5 %	Buckskin Pearl 25 %	Bay Double-Pe 12.5 %		

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ggaaeeCCPrIPrl	Smokey Pearl 25 %	Black Double-P 25 %	Buckskin Pearl 25 %	Bay Double-Pe 25 %						
GgAAEECCNN	Buckskin 25 %	Bay 25 %	Grey 50 %							
GgAAEECCrNN	Buckskin 12.5 %	Perlino 12.5 %	Bay 12.5 %	Buckskin Pearl 12.5 %	Grey 50 %					
GgAAEECCNPrl	Buckskin 12.5 %	Bay 12.5 %	Buckskin Pearl 12.5 %	Bay Double-Pe 12.5 %	Grey 50 %					
GgAAEECCrCrNN	Perlino 25 %	Buckskin Pearl 25 %	Grey 50 %							
GgAAEECCrNPrl	Perlino 12.5 %	Buckskin Pearl 25 %	Bay Double-Pe 12.5 %	Grey 50 %						
GgAAEECCPrIPrl	Buckskin Pearl 25 %	Bay Double-Pe 25 %	Grey 50 %							
GgAaEECCNN	Smokey Black 6.25 %	Black 6.25 %	Buckskin 18.75 %	Bay 18.75 %	Grey 50 %					
GgAaEECCrNN	Smokey Black 3.125 %	Smokey Cream 3.125 %	Black 3.125 %	Smokey Pearl 3.125 %	Buckskin 9.375 %	Perlino 9.375 %	Bay 9.375 %	Buckskin Pearl 9.375 %	Grey 50 %	
GgAaEECCNPrl	Smokey Black 3.125 %	Black 3.125 %	Smokey Pearl 3.125 %	Black Double-P 3.125 %	Buckskin 9.375 %	Bay 9.375 %	Buckskin Pearl 9.375 %	Bay Double-Pe 9.375 %	Grey 50 %	
GgAaEECrCrNN	Smokey Cream 6.25 %	Smokey Pearl 6.25 %	Perlino 18.75 %	Buckskin Pearl 18.75 %	Grey 50 %					
GgAaEECCrNPrl	Smokey Cream 3.125 %	Smokey Pearl 6.25 %	Black Double-P 3.125 %	Perlino 9.375 %	Buckskin Pearl 18.75 %	Bay Double-Pe 9.375 %	Grey 50 %			
GgAaEECCPrIPrl	Smokey Pearl 6.25 %	Black Double-P 6.25 %	Buckskin Pearl 18.75 %	Bay Double-Pe 18.75 %	Grey 50 %					
GgaaEECCNN	Smokey Black 12.5 %	Black 12.5 %	Buckskin 12.5 %	Bay 12.5 %	Grey 50 %					
GgaaEECCrNN	Smokey Black 6.25 %	Smokey Cream 6.25 %	Black 6.25 %	Smokey Pearl 6.25 %	Buckskin 6.25 %	Perlino 6.25 %	Bay 6.25 %	Buckskin Pearl 6.25 %	Grey 50 %	
GgaaEECCNPrl	Smokey Black 6.25 %	Black 6.25 %	Smokey Pearl 6.25 %	Black Double-P 6.25 %	Buckskin 6.25 %	Bay 6.25 %	Buckskin Pearl 6.25 %	Bay Double-Pe 6.25 %	Grey 50 %	
GgaaEECrCrNN	Smokey Cream 12.5 %	Smokey Pearl 12.5 %	Perlino 12.5 %	Buckskin Pearl 12.5 %	Grey 50 %					
GgaaEECCrNPrl	Smokey Cream 6.25 %	Smokey Pearl 12.5 %	Black Double-P 6.25 %	Perlino 6.25 %	Buckskin Pearl 12.5 %	Bay Double-Pe 6.25 %	Grey 50 %			
GgaaEECCPrIPrl	Smokey Pearl 12.5 %	Black Double-P 12.5 %	Buckskin Pearl 12.5 %	Bay Double-Pe 12.5 %	Grey 50 %					
GgAAEeCCNN	Buckskin 25 %	Bay 25 %	Grey 50 %							
GgAAEeCCrNN	Buckskin 12.5 %	Perlino 12.5 %	Bay 12.5 %	Buckskin Pearl 12.5 %	Grey 50 %					
GgAAEeCCNPrl	Buckskin 12.5 %	Bay 12.5 %	Buckskin Pearl 12.5 %	Bay Double-Pe 12.5 %	Grey 50 %					
GgAAEeCrCrNN	Perlino 25 %	Buckskin Pearl 25 %	Grey 50 %							
GgAAEeCCrNPrl	Perlino 12.5 %	Buckskin Pearl 25 %	Bay Double-Pe 12.5 %	Grey 50 %						
GgAAEeCCPrIPrl	Buckskin Pearl 25 %	Bay Double-Pe 25 %	Grey 50 %							
GgAaEeCCNN	Smokey Black 6.25 %	Black 6.25 %	Buckskin 18.75 %	Bay 18.75 %	Grey 50 %					
GgAaEeCCrNN	Smokey Black 3.125 %	Smokey Cream 3.125 %	Black 3.125 %	Smokey Pearl 3.125 %	Buckskin 9.375 %	Perlino 9.375 %	Bay 9.375 %	Buckskin Pearl 9.375 %	Grey 50 %	
GgAaEeCCNPrl	Smokey Black 3.125 %	Black 3.125 %	Smokey Pearl 3.125 %	Black Double-P 3.125 %	Buckskin 9.375 %	Bay 9.375 %	Buckskin Pearl 9.375 %	Bay Double-Pe 9.375 %	Grey 50 %	

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GgAaEeCrCrNN	Smokey Cream 6.25 %	Smokey Pearl 6.25 %	Perlino 18.75 %	Buckskin Pearl 18.75 %	Grey 50 %				
GgAaEeCCrNPrl	Smokey Cream 3.125 %	Smokey Pearl 6.25 %	Black Double-P 3.125 %	Perlino 9.375 %	Buckskin Pearl 18.75 %	Bay Double-Pe 9.375 %	Grey 50 %		
GgAaEeCCPrIPrl	Smokey Pearl 6.25 %	Black Double-P 6.25 %	Buckskin Pearl 18.75 %	Bay Double-Pe 18.75 %	Grey 50 %				
GgaaEeCCNN	Smokey Black 12.5 %	Black 12.5 %	Buckskin 12.5 %	Bay 12.5 %	Grey 50 %				
GgaaEeCCrNN	Smokey Black 6.25 %	Smokey Cream 6.25 %	Black 6.25 %	Smokey Pearl 6.25 %	Buckskin 6.25 %	Perlino 6.25 %	Bay 6.25 %	Buckskin Pearl 6.25 %	Grey 50 %
GgaaEeCCNPrl	Smokey Black 6.25 %	Black 6.25 %	Smokey Pearl 6.25 %	Black Double-P 6.25 %	Buckskin 6.25 %	Bay 6.25 %	Buckskin Pearl 6.25 %	Bay Double-Pe 6.25 %	Grey 50 %
GgaaEeCrCrNN	Smokey Cream 12.5 %	Smokey Pearl 12.5 %	Perlino 12.5 %	Buckskin Pearl 12.5 %	Grey 50 %				
GgaaEeCCrNPrl	Smokey Cream 6.25 %	Smokey Pearl 12.5 %	Black Double-P 6.25 %	Perlino 6.25 %	Buckskin Pearl 12.5 %	Bay Double-Pe 6.25 %	Grey 50 %		
GgaaEeCCPrIPrl	Smokey Pearl 12.5 %	Black Double-P 12.5 %	Buckskin Pearl 12.5 %	Bay Double-Pe 12.5 %	Grey 50 %				
GgAAeeCCNN	Buckskin 25 %	Bay 25 %	Grey 50 %						
GgAAeeCCrNN	Buckskin 12.5 %	Perlino 12.5 %	Bay 12.5 %	Buckskin Pearl 12.5 %	Grey 50 %				
GgAAeeCCNPrl	Buckskin 12.5 %	Bay 12.5 %	Buckskin Pearl 12.5 %	Bay Double-Pe 12.5 %	Grey 50 %				
GgAAeeCrCrNN	Perlino 25 %	Buckskin Pearl 25 %	Grey 50 %						
GgAAeeCCrNPrl	Perlino 12.5 %	Buckskin Pearl 25 %	Bay Double-Pe 12.5 %	Grey 50 %					
GgAAeeCCPrIPrl	Buckskin Pearl 25 %	Bay Double-Pe 25 %	Grey 50 %						
GgAaeCCNN	Smokey Black 6.25 %	Black 6.25 %	Buckskin 18.75 %	Bay 18.75 %	Grey 50 %				
GgAaeCCrNN	Smokey Black 3.125 %	Smokey Cream 3.125 %	Black 3.125 %	Smokey Pearl 3.125 %	Buckskin 9.375 %	Perlino 9.375 %	Bay 9.375 %	Buckskin Pearl 9.375 %	Grey 50 %
GgAaeCCNPrl	Smokey Black 3.125 %	Black 3.125 %	Smokey Pearl 3.125 %	Black Double-P 3.125 %	Buckskin 9.375 %	Bay 9.375 %	Buckskin Pearl 9.375 %	Bay Double-Pe 9.375 %	Grey 50 %
GgAaeCrCrNN	Smokey Cream 6.25 %	Smokey Pearl 6.25 %	Perlino 18.75 %	Buckskin Pearl 18.75 %	Grey 50 %				
GgAaeCCrNPrl	Smokey Cream 3.125 %	Smokey Pearl 6.25 %	Black Double-P 3.125 %	Perlino 9.375 %	Buckskin Pearl 18.75 %	Bay Double-Pe 9.375 %	Grey 50 %		
GgAaeCCPrIPrl	Smokey Pearl 6.25 %	Black Double-P 6.25 %	Buckskin Pearl 18.75 %	Bay Double-Pe 18.75 %	Grey 50 %				
GgaaeeCCNN	Smokey Black 12.5 %	Black 12.5 %	Buckskin 12.5 %	Bay 12.5 %	Grey 50 %				
GgaaeeCCrNN	Smokey Black 6.25 %	Smokey Cream 6.25 %	Black 6.25 %	Smokey Pearl 6.25 %	Buckskin 6.25 %	Perlino 6.25 %	Bay 6.25 %	Buckskin Pearl 6.25 %	Grey 50 %
GgaaeeCCNPrl	Smokey Black 6.25 %	Black 6.25 %	Smokey Pearl 6.25 %	Black Double-P 6.25 %	Buckskin 6.25 %	Bay 6.25 %	Buckskin Pearl 6.25 %	Bay Double-Pe 6.25 %	Grey 50 %
GgaaeeCrCrNN	Smokey Cream 12.5 %	Smokey Pearl 12.5 %	Perlino 12.5 %	Buckskin Pearl 12.5 %	Grey 50 %				
GgaaeeCCrNPrl	Smokey Cream 6.25 %	Smokey Pearl 12.5 %	Black Double-P 6.25 %	Perlino 6.25 %	Buckskin Pearl 12.5 %	Bay Double-Pe 6.25 %	Grey 50 %		
GgaaeeCCPrIPrl	Smokey Pearl 12.5 %	Black Double-P 12.5 %	Buckskin Pearl 12.5 %	Bay Double-Pe 12.5 %	Grey 50 %				

The results of this report only affect the samples received and analyzed in our laboratory.

Sample sent by the client. The reproduction of this document is only authorized if it is done in its entirety.