

## EXPLANATIONS ON COAT COLOUR GENETICS

### BASE COLOUR

#### Coat colour brown

B (unaltered) > b (chocolate) > bl (cinnamon)

Genotype	Inheritance	Effect
B/B	Does not transmit the traits chocolate and cinnamon	Unmodified eumelanin (black)
B/b	Can transmit the trait chocolate	
B/bl	Can transmit the trait cinnamon	
b/b	Transmits the trait chocolate	Eumelanin colour chocolate
b/bl	Can transmit the traits chocolate and cinnamon	Eumelanin colour cinnamon
bl/bl	Transmits the trait cinnamon	

### Dilution

D (unaltered) > d (dilution)

Genotype	Inheritance	Effect
D/D	Does not transmit the trait dilution	No modification of the base colour
D/d	Can transmit the trait dilution	
d/d	Transmits the trait dilution	Dilution of the base colour (lightened base colour)

## COAT PATTERN AND PIGMENT DISTRIBUTION

### Colour variant agouti

A (agouti) > a (solid)

Genotype	Inheritance	Effect
A/A	Does not transmit the trait solid	Coat pattern present
A/a	Can transmit the trait solid	
a/a	Transmits the trait solid	Even distribution in the pigmented areas, no coat pattern

### Colour variant charcoal

A (agouti) > A(Pb) (charcoal) > a (solid)

Genotype	Inheritance	Effect
A/A	Does not transmit the trait solid	Coat pattern present
A/A(Pb)	Does not transmit the trait solid	
A/a	Can transmit the trait solid	
A(Pb)/A(Pb)	Does not transmit the trait solid	
A(Pb)/a	Can transmit the trait solid	Coat pattern present, charcoal
a/a	Transmits the trait solid	Even distribution in the pigmented areas, no coat pattern

## Colour variant colourpoint / snow

C (unaltered) > cb (burma) = cs (siam)

Genotype	Inheritance	Effect
C/C	Does not transmit the traits siam and burma	Pigment formation independent of temperature
C/cs	Can transmit the trait siam	
C/cb	Can transmit the trait burma	
cb/cb	Transmits the trait burma	Temperature-dependent pigment formation: Burmese variant
cs/cb	Transmits the traits siam or burma	Temperature-dependent pigment formation: Tonkanese variant
cs/cs	Transmits the trait siam	Temperature-dependent pigment formation: Siamese variant

## Colour variant ticked

TiCK (ticked) = TiA (ticked) > N (unaltered)

Genotype	Inheritance	Effect
TiCK/TiCK	Transmits the trait ticked	Ticked tabby
TiA/TiA	Transmits the trait ticked	
TiCK/N	Can transmit the trait ticked	
TiA/N	Can transmit the trait ticked	
N/N	Does not transmit the trait ticked	no ticked tabby

## Colour variant tabby

TaM (mackerel) > Tab (blotched)

The blotched phenotype is expressed if the genotype Tab/Tab is present for one of the two variants

Genotype	Inheritance	Effect
TaM/TaM	Does not transmit the trait blotched	Mackerel tabby (spotted tabby)
TaM/Tab	Can transmit the trait blotched	
Tab/Tab	Transmits the trait blotched	Blotched tabby

## BREED SPECIFIC COLOURS

### Colour variant gold (sunshine)

Breeds: Kurilian Bobtail, Siberian | N > wbeSib (extreme sunshine) > wbSib (sunshine)

Genotype	Inheritance	Effect
N/N	Does not transmit the traits sunshine or extreme sunshine	No modification
N/wbeSib	Can transmit the trait extreme sunshine	
N/wbSib	Can transmit the trait sunshine	
wbeSib/wbeSib	Transmits the trait extreme sunshine	Gold (extreme sunshine)
wbeSib/wbSib	Can transmit the traits sunshine and extreme sunshine	
wbSib/wbSib	Transmits the trait sunshine	Gold (sunshine)

### Colour variant gold (copper)

Breeds: British Shorthair | N (unaltered) > wbBSH (copper)

Genotype	Inheritance	Effect
N/N	Does not transmit the trait copper	No modification
N/wbBSH	Can transmit the trait copper	
wbBSH/wbBSH	Transmits the trait copper	Gold (copper)

## Coat colour amber

Breeds: Norwegian Forest Cat | E (unaltered) > e (amber)

Genotype	Inheritance	Effect
E/E	Does not transmit the trait amber	No modification
E/e	Can transmit the trait amber	
e/e	Transmits the trait amber	Expression of Pheomelanin (amber)

## Coat colour copal

Breeds: Kurilian Bobtail | E (unaltered) > ec (copal)

Genotype	Inheritance	Effect
E/E	Does not transmit the trait copal	No modification
E/ec	Can transmit the trait copal	
ec/ec	Transmits the trait copal	Expression of Pheomelanin (copal)

## Coat colour russet

Breeds: Burmese | E (unaltered) > er (russet)

Genotype	Inheritance	Effect
E/E	Does not transmit the trait russet	No modification
E/er	Can transmit the trait russet	
er/er	Transmits the trait russet	Expression of Pheomelanin (russet)

## HAIR LENGTH AND COAT STRUCTURE

### Hair length

N (short hair) > M1, M2, M3, M4 (long hair)

Genotype	Inheritance	Effect
N/N	Does not transmit long hair	Short hair
N/M1-4	Can transmit long hair	
M1-4/M1-4	Transmits long hair	Long hair

### Coat variant Sphynx / Devon Rex

Breeds: Devon Rex, Sphynx | N > hr (Sphynx coat variant) > re (Devon Rex coat variant)

Genotype	Inheritance	Effect
N/N	Does not transmit the Sphynx and Devon Rex coat variants	No modification
N/hr	Can transmit the Sphynx coat variant	
N/re	Can transmit the Devon Rex coat variant	
hr/hr	Transmits the Devon Rex coat variant	Sphynx coat variant (hairlessness)
hr/re	Can transmit the Sphynx and Devon Rex coat variants	
re/re	Transmits the Devon Rex coat variant	Devon Rex coat variant (curly)

### Coat variant curly

Breeds: Selkirk Rex | N (unaltered) > Cu (curly)

Genotype	Inheritance	Effect
N/N	Does not transmit the trait curly	No modification
N/Cu	Can transmit the trait curly	
Cu/Cu	Transmits the trait curly	Curly