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DOG COAT COLOR / FUR TYPE TEST RESULTS

JASMINE WEBER

Case: **DDT6412**
Date Received: 01-Feb-2013
Report Date: 05-Feb-2013
Report ID: 9702-3553-4647-5111
Verify report at https://www.vgl.ucdavis.edu/myvgl/verify.html

Name: **HRH ISAAC DE PORTHAU** *Reg:* **NP32552603**
DOB: **04/26/2012** *Breed:* **FBU** *Sex:* **M** *Microchip:* **956000008976562**

Sire: HRH SIR FRANKINGTON FITZALLEN *Reg:* NP25114601
Dam: LITTLE MONSTER SURPRISE *Reg:* NP32303701

BLACK/RED (MC1R)	**E/e**	1 copy of black, carrier of clear red/yellow. Can produce clear red/yellow puppies, depending on the genetics of the mate
BROWN (TYRP1)		Not requested.
DILUTE (MLPH)	**D/d**	Full color, carries 1 copy of the dilute gene
DOMINANT BLACK	**N/N**	Dog does not have the dominant black mutation
AGOUTI	**a^y/a^y**	Homozygous for fawn/sable
PIEBALD		Not requested.
COAT LENGTH		Not requested.
CURL		Not requested.
FURNISHINGS		Not requested.

Dog Coat Color / Fur Type Results with Explanations

BLACK/RED (MC1R)

E/E - 2 copies of black cannot have clear red/yellow offspring.
E/e - 1 copy of black, carrier of clear red/yellow. Can produce clear red/yellow puppies, depending on the genetics of the mate.
e/e - clear red/yellow.

BLACK/RED (MC1R) + MELANISTIC MASK

Em/Em - 2 copies of mask are present- dog has mask and cannot have clear red/yellow offspring.
Em/E - 1 copy of mask is present - dog has mask and carries black.
Em/e - 1 copy of mask is present - dog has mask and carries clear red/yellow.
E/E - 2 copies of black, dog cannot have clear red/yellow offspring.
E/e - 1 copy of black, carrier of clear red/yellow.
e/e - clear red/yellow.

DILUTE (MLPH)

D/D - Full color, no dilute gene present.
D/d - Full color, carries 1 copy of the dilute gene.
d/d - Dilute, 2 copies of the dilute gene.

DOMINANT BLACK - Black/ brindle or fawn

K/K - 2 copies of dominant black are present, no brindle or fawn offspring will be produced.
K/N - 1 copy of dominant black is present, brindle or fawn offspring can be produced, depending on the genotype of the mate.Note: with some breeds of dog this result is associated with the brindle pattern.
N/N - Dog does not have the dominant black mutation.

COAT LENGTH

S/S - Dog has short hair. Long-haired offspring cannot be produced.
S/L - Dog has short hair and carries long hair gene.
L/L - Dog has long hair.

CURL

N/N - Dog has straight coat.
N/C - Dog has wavy coat.
C/C - Dog has curly coat.

FURNISHINGS

N/N - Dog does not have furnishings.
N/F - Dog has furnishings and carries 1 copy of the non-furnishing gene.
F/F - Dog has furnishings. All offspring will have furnishings.

BROWN (TYRP1)

B/B - Does not carry brown - cannot have brown offspring.
B/b - 1 copy of brown present - carrier.
b/b - 2 copies of brown present - black pigment (if present) is diluted to brown, red/yellow dogs have brown noses and foot pads.

MELANISTIC MASK

Em/Em - 2 copies of mask are present - dog has mask.
Em/N - 1 copy of mask is present - dog has mask.
N/N - no copies of mask are present.

AGOUTI*

$\mathbf{a^y/a^y}$ - Homozygous for fawn/sable.
$\mathbf{a^y/a^w}$ - Dog has fawn and carries wild sable.
$\mathbf{a^y/a^t}$ - Dog has fawn and carries black-and-tan.
$\mathbf{a^y/a}$ -Dog has fawn and carries recessive black.
$\mathbf{a^w/a^w}$ - Homozygous for wild-sable.
$\mathbf{a^w/a^t}$ - Dog has wild-sable and carries black-and-tan.
$\mathbf{a^w/a}$ - Dog has wild-sable and carries recessive black.
$\mathbf{a^t/a^t}$ - Homozygous for black-and-tan.
$\mathbf{a^t/a}$ - Dog has black-and-tan and carries recessive black.
a/a - Homozygous for recessive black.
$\mathbf{a^y/a^{yt}}$ - Dog has a normal fawn allele and a recombinant fawn plus black-and-tan allele. The recombinant allele behaves as a normal fawn allele.
$\mathbf{a^{yt}/a^t}$ - Dog has a recombinant fawn plus black-and-tan allele and carries a black-and-tan allele. The recombinant allele behaves as a normal fawn allele.
* Expression of agouti is dependent on complex interaction of other coat color genes such as MC1R and Dominant Black.

PIEBALD/WHITE SPOTTING**

S/S - Dog has 2 copies of piebald.
N/S - Dog has 1 copy of piebald.
N/N - Dog has no copies of piebald.
** Expression of white patterns varies from breed to breed and among individuals within a breed. This test is specific for the mutation in MITF known to be associated with piebald/white spotting.

Many genes are involved in production of coat color and fur type. The results above are specific for known variants in ASIP, MC1R, TYRP, MLPH, CBD103, KRT71, RSPO2, MITF and FGF5. The results do not completely describe the color and fur type of a dog.