

## DOG COAT COLOR / NATURAL BOBTAIL TEST REPORT

<p><i>Provided Information:</i></p> <p><b>Name:</b> WOODLANDS BEMINI</p> <p><b>Registration:</b> NP71136701</p>	<p><b>Case:</b> NCD217394</p> <p><b>Date Received:</b> 04-Apr-2023</p> <p><b>Report Issue Date:</b> 12-Apr-2023</p> <p><b>Report ID:</b> 5456-8006-7957-2197</p> <p style="text-align: center; font-size: small;">Verify report at <a href="http://www.vgl.ucdavis.edu/verify">www.vgl.ucdavis.edu/verify</a></p>
<p><b>DOB:</b> 11/04/2021 <b>Sex:</b> Female <b>Breed:</b> French Bulldog</p>	

### RESULT

### INTERPRETATION

Locus	Genotype	Interpretation
MC1R (E LOCUS)	E <sup>m</sup> /e <sup>l</sup>	1 copy of mask and 1 copy of red/yellow/cream.
BROWN (B LOCUS)	B/B	Does not carry brown - cannot have brown offspring.
DILUTE (D LOCUS)	d <sup>l</sup> /d <sup>l</sup>	Dilute, 2 copies of the dilution variants.
DOMINANT BLACK (K LOCUS)	N/N	Dog does not have the dominant black mutation.
LEGACY AGOUTI	a <sup>l</sup> /a	Dog has black-and-tan and carries recessive black.
AGOUTI (A LOCUS)	ASIP <sup>BB1</sup> /ASIP <sup>a</sup>	One copy of black back 1 and one copy of recessive black.
MERLE	N/N	No copies of the merle associated SINE insertion.
PIEBALD (S LOCUS)	N/N	Dog has no copies of piebald.
COCOA	co/co	2 copies of the cocoa variant.

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<p><i>Client/Owner/Agent Information:</i>          RONNIE COBLENTZ          6827 COUNTY ROAD 672            MILLERSBURG, OH 44654</p>	<p><i>Case:</i> <b>NCD217394</b>  <i>Date Received:</i> 04-Apr-2023  <i>Report Issue Date:</i> 12-Apr-2023  <i>Report ID:</i> 5456-8006-7957-2197</p> <p style="text-align: center; font-size: small;">Verify report at <a href="http://www.vgl.ucdavis.edu/verify">www.vgl.ucdavis.edu/verify</a></p>
<p><i>Name:</i> <b>WOODLANDS BEMINI</b></p>	

**Additional Information**

If testing for a disease or a disorder was performed and results indicate the animal is affected or at risk, we recommend contacting your veterinarian for further clinical evaluation and for additional information on disease and management.

For more detailed information on Dog Coat Color test results, please visit our website at:  
[www.vgl.ucdavis.edu/resources/dog-coat-color](http://www.vgl.ucdavis.edu/resources/dog-coat-color)

Agouti research is ongoing, and additional variation beyond the resolution of this test may exist.

For terms and conditions of testing, please see [www.vgl.ucdavis.edu/about/terms-and-conditions](http://www.vgl.ucdavis.edu/about/terms-and-conditions)

Results are determined using PCR-based methods. The results relate only to the sample tested as identified by the submitter (for example, identity and/or breed).

**Report authorized by Dr. Rebecca Bellone, VGL Director**

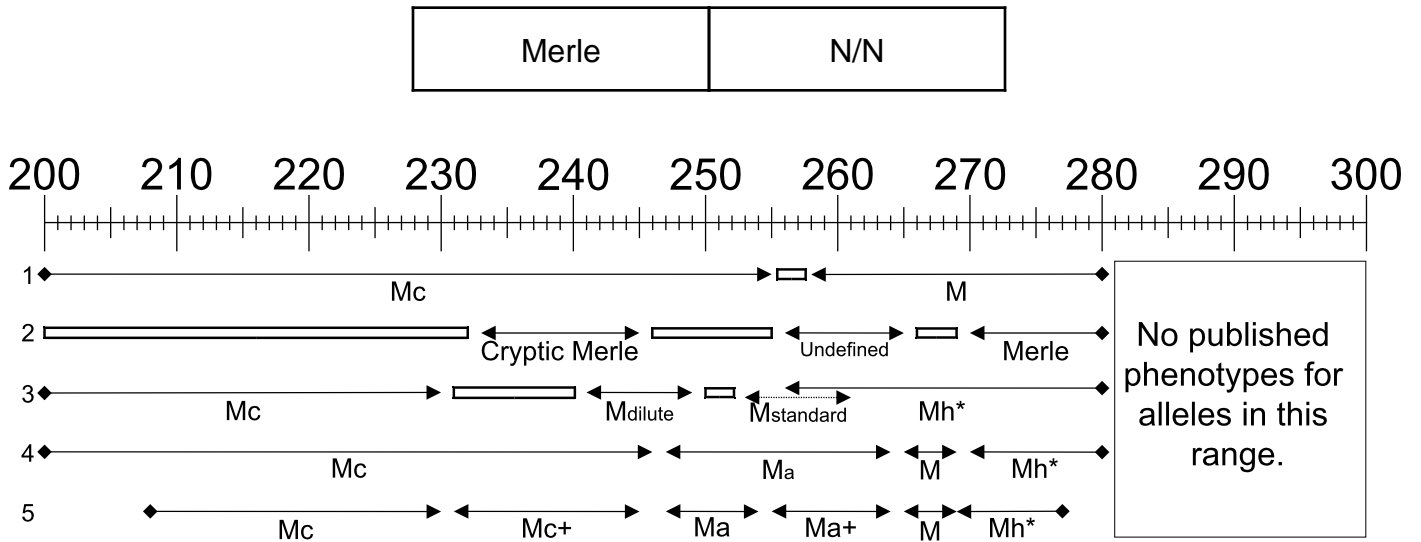
Veterinary Genetics Laboratory · University of California Davis · One Shields Ave · Davis, CA 95616  
[vgl.ucdavis.edu](http://vgl.ucdavis.edu) · (530) 752-2211



**ADDITIONAL INFORMATION FOR  
MERLE RESULTS**

<b>Provided Information:</b>	<b>Case:</b> <b>NCD217394</b>
<b>Name:</b> <b>WOODLANDS BEMINI</b>	<b>Date Received:</b> 04-Apr-2023
<b>Registration:</b> <b>NP71136701</b>	<b>Report Issue Date:</b> 12-Apr-2023
<b>DOB:</b> <b>11/04/2021</b> <b>Sex:</b> <b>Female</b> <b>Breed:</b> <b>French Bulldog</b>	<b>Report ID:</b> 5456-8006-7957-2197
Verify report at <a href="http://www.vgl.ucdavis.edu/verify">www.vgl.ucdavis.edu/verify</a>	

Several interpretations and nomenclatures for the Merle variant have been proposed. Below is a graphical display of the merle alleles detected and the publications that define these nomenclatures.



Open boxes represent unassigned size variants within a specific naming system.

<sup>1</sup>Previous merle pattern result reported by the VGL.

Mc=200-255, M=258-280

<sup>2</sup>Merle pattern nomenclature defined by Clark et al. 2006.

<sup>3</sup>Merle pattern nomenclature defined by Murphy et al. 2018.

Mc=200-230, Mdilute=241-249, Mstandard=253-261, Mh=256-280

<sup>4</sup>Merle pattern nomenclature defined by Ballif et al. 2018.

Mc=200-246, Ma=247-264, M=265-269, Mh=270-280

<sup>5</sup>Merle pattern nomenclature defined by Langevin et al. 2018.

Mc=208-230, Mc+=231-245, Ma=247-254, Ma+=255-264, M=265-269, Mh=269-277

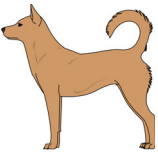





\* Mh "harlequin" is not the true Great Dane Harlequin (H) identified by Clark et al. 2008.


# Agouti: the ASIP (A) locus


The Agouti gene, also referred to as the **A locus** or **ASIP locus**, is a gene that controls where and when eumelanin (i.e. black/brown pigment) or phaeomelanin (i.e. red/yellow/tan pigment) is produced in the coat of dogs and other mammals. The old Agouti test (now referred to as Legacy Agouti) identified four alleles at the Agouti locus, but these alleles did not fully explain the different coat color phenotypes controlled by this gene. Recent research by Dr. Bannasch and colleagues has uncovered more of the complexity of dog coat color as it relates to the ASIP locus, allowing our laboratory to offer a more complete test to our clients.

The new Agouti test allows for the identification of eight haplotype combinations, and their correspondence to the Legacy Agouti alleles is shown below.

*Note: The illustrations below portray examples of adult coat patterns. Puppy coats typically exhibit more eumelanin (black/brown pigment). For example, in puppies, the Black Saddle coloration looks like Black Back and Shaded Yellow can look very similar to Agouti.*

PHENOTYPE NAME	COMMON NAMES	ASIP HAPLOTYPE COMBINATION	OLD ALLELE Legacy Agouti		
	Dominant Yellow	fawn, sable, red, cream, tan	<b>ASIP<sup>DY</sup></b>	a <sup>y</sup>	<div style="display: flex; align-items: center;"> <div style="flex-grow: 1; border-left: 1px solid black; margin-right: 5px;"></div> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: small;">most dominant</div> </div>
	Shaded Yellow	shaded sable, shaded fawn, fawn, sable, red, cream, tan	<b>ASIP<sup>SY</sup></b>		
	Agouti	wolf sable, sable, grey, agouti	<b>ASIP<sup>AG</sup></b>	a <sup>w</sup> *	
	Black Saddle	saddle back, saddle tan, black and tan, hound	<b>ASIP<sup>BS</sup></b>	a <sup>t</sup>	
	Black Back	black and tan, bicolor, tan points, pointed	<b>ASIP<sup>BB1</sup></b> <b>ASIP<sup>BB2</sup></b> <b>ASIP<sup>BB3</sup></b>		
	Recessive Black	black	<b>ASIP<sup>a</sup></b>		

 Eumelanin (black/brown pigment)  
Appearance of pigment will depend on other genes, e.g. Brown (B locus), Dilute (D locus), *MC1R* (E locus), and Dominant Black (K locus)

 Phaeomelanin (yellow/red/tan pigment)  
Appearance of pigment will depend on other genes, e.g. Dilute (D locus), Intensity (I<sub>n</sub>), and *KITLG*

\*In some cases, the a<sup>w</sup> Legacy Agouti allele can correspond to the new **ASIP<sup>BB3</sup>** haplotype combination.

## FRENCH BULLDOG GENETIC HEALTH PANEL TEST REPORT

<b>Provided Information:</b>  Name: <b>WOODLANDS BEMINI</b> Registration: <b>NP71136701</b>	<b>Case: NCD217394</b> Date Received: 04-Apr-2023 Report Issue Date: 10-Apr-2023 Report ID: 5943-8639-3570-2199  <p style="text-align: center; font-size: small;">Verify report at <a href="http://www.vgl.ucdavis.edu/verify">www.vgl.ucdavis.edu/verify</a></p>
DOB: 11/04/2021 Sex: Female Breed: French Bulldog	

### RESULT

### INTERPRETATION

<b>Canine Multifocal Retinopathy (CMR1)</b>	<b>N/N</b>	Normal - no copies of the CMR1 mutation.
<b>Degenerative Myelopathy (DM)</b>	<b>N/DM</b>	1 copy of the DM mutation.
<b>Juvenile Hereditary Cataract (JHC)</b>	<b>N/N</b>	No copies of JHC mutation. Cataracts may however develop because of other genetic and environmental factors.
<b>Hyperuricosuria (HUU)</b>	<b>N/N</b>	No copies of the hyperuricosuria mutation detected. Dog is normal.

## FRENCH BULLDOG GENETIC HEALTH PANEL TEST REPORT

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<p><i>Name:</i> <b>WOODLANDS BEMINI</b></p>	

### Additional Information

If testing for a disease or a disorder was performed and results indicate the animal is affected or at risk, we recommend contacting your veterinarian for further clinical evaluation and for additional information on disease and management.

For more detailed information on French Bulldog Genetic test results, please visit our website at: [www.vgl.ucdavis.edu/services/dog/FrenchBulldogHealthPanel.php](http://www.vgl.ucdavis.edu/services/dog/FrenchBulldogHealthPanel.php)

For terms and conditions of testing, please see [www.vgl.ucdavis.edu/about/terms-and-conditions](http://www.vgl.ucdavis.edu/about/terms-and-conditions)

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