Carrier Tests for Point-Restriction Coat Color in the Domestic Cat

Tech ID: 11317 / UC Case 2004-427-0

ABSTRACT

Carrier Tests for Point-Restriction and Albinism in the Domestic Cat

FULL DESCRIPTION

Novel carrier tests for Point-restriction and albinism in the domestic cat have been developed by University of California, Davis researchers. Three mutations cause four color variations that are presented in fancy breed and random bred cats throughout the world. These mutations have been identified in the gene Tyrosinase and are responsible for the "points" colorations, found in and distinguishing Siamese and Himalayan Persians, the Burmese coloration in Burmese and Singapura cats, and a complete albino phenotype found in Siamese and Colorpoints. The fourth coloration is due to a combination of “Points” and Burmese mutations, producing the phenotype in Tonkinese cats.

APPLICATIONS

In these coat color carrier tests, these DNA mutations are used to detect carriers by DNA mutation testing. The mutations are recessive, thus carriers cannot be generally determined currently without test matings. DNA testing for these mutations can identify the carriers, reducing the need for expensive production of unwanted cats. In addition, the DNA testing can easily be performed on small amounts of DNA using very non-invasive and low cost collection techniques.

FEATURES/BENEFITS

Advantages of these carrier tests for coat color variants include:

- The ability to detect carriers of these specific DNA mutations at time of birth;
- Reduced need for expensive production of unwanted cats from test crosses;
- Non-invasive, lower cost DNA methods for diagnosis;
- Small required amount of DNA for testing; and
- More informed breeding decisions.

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INVENTORS

- Imes, Donna L.
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OTHER INFORMATION

KEYWORDS

carrier tests in the domestic cat, point-restriction coat color, carrier tests for coat color variants, DNA mutation testing for domestic cats, feline

CATEGORIZED AS

- **Veterinary**
  - Diagnostics

RELATED CASES

2004-427-0

RELATED MATERIALS

- Lyons LA, Imes DL, Rah HC, Grahn RA. 2005. Tyrosinase mutations associated with Siamese and Burmese patterns in the domestic cat (Felis catus). Anim Genet. 36(2):119-26.
- Lyons LA, Foe IT, Rah HC, Grahn RA. 2005. Chocolate coated cats: TYRP1 mutations for brown color in domestic cats. Mamm Genome. 16(5):356-66.
- Also see The Lyons' Den at http://www.vetmed.ucdavis.edu/Catgenetics/Index.htm

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	7,183,058	02/27/2007	2004-427

RELATED TECHNOLOGIES

- Genetic Test for Determining Blood Type in Domestic Cats
- Tests for Polycystic Kidney Disease in Domestic Cats

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- Genetic Test for Determining Blood Type in Domestic Cats
- Tests for Polycystic Kidney Disease in Domestic Cats

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