Genetic Test for Determining Blood Type in Domestic Cats

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ABSTRACT

Identification of Mutations in the Gene CMAH that causes the Cat Blood Type B

FULL DESCRIPTION

Domestic cats have one major blood group system with three different types: A, B and the rare AB. The two major serotypes are blood type A and type B, with type A dominant to type B. The rare type AB may also be allelic and is suspected to be recessive to A and dominant to B. Cat blood typing is important mainly for two reasons: to avoid neonatal isoerythrolysis (NI) that can occur in newborn kittens, and to avoid reactions for blood incompatibility when the cat needs a blood transfusion. These reactions, which may vary in severity from mild to fatal, are due to naturally occurring antibodies. Thus, prevention of NI and transfusion reactions requires close monitoring of blood types.

Researchers at the University of California, Davis have identified a series of mutations in the gene CMAH that distinguish type A from type B and are 100% concordant with all cats serotyped. Furthermore, UC Davis researchers have developed a genetic test to distinguish between the blood type A cats and the ones that are carriers for the B blood type allele, which is impossible with serological tests.

APPLICATIONS

This genetic test can be used for typing domestic cat blood.

FEATURES/BENEFITS

Even though accurate tests are readily available to determine feline blood types, the development of a genetic test has the following advantages:

- The identification of the B-type allele carrier is especially useful for cat breeders in selecting matings to avoid NI complications.
- The genetic test is non-invasive and can be performed on very young kittens. It can be performed from a buccal swab and does not require a blood draw.

RELATED MATERIALS

- Bighignoli B, Niini T, Grahn RA, Pedersen NC, Millon LV, Polli M, Longeri M and Lyons LA. 2007. Cytidine monophospho-N-acetylneuraminic acid hydroxylase (CMAH) mutations associated with the domestic cat AB blood group. BMC Genet. 8(1):27.
- 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	7,985,543	07/26/2011	2007-264

CONTACT
Victor Haroldsen
haroldsen@ucdavis.edu
tel: 530-752-7717.



INVENTORS
- Lyons, Leslie A.
- Pedersen, Niels C.

OTHER INFORMATION

KEYWORDS

blood group, blood type, cat, CMAH, RapidVet Blood Typing cards

CATEGORIZED AS

- **Veterinary**
  - Diagnostics

RELATED CASES

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University of California, Davis
Technology Transfer Office
1 Shields Avenue, Mrak Hall 4th Floor,
Davis,CA 95616

Tel: 530.754.8649
techtransfer@ucdavis.edu
https://research.ucdavis.edu/technology-transfer/
Fax: 530.754.7620

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