GENETICS

Hille Fieten, DVM, PhD, ECVIM-CA internal medicine, MSc genetic epidemiology

Director of the Expertise Centre Genetics of Companion animals, Faculty of Veterinary Medicine, Utrecht University
The Netherlands

h.fieten@uu.nl

DNA-TESTING IN CLINICAL PRACTICE

Use of DNA tests in clinical practice can be helpful in the work-up of specific problems for ruling out diseases or make a definitive diagnosis. It can also be helpful in decision making for medication type and dose in a breed known for harboring the MDR-1 mutation. However, the majority of DNA-testing for specific diseases is performed for breeding purposes. This includes tests for traits, like coat color and pattern, but more importantly DNA tests can be an effective tool for eradication of monogenetic disease from the breeding population. It is important to realize which kind of test is offered by the laboratory. For example: is it a test for a monogenetic disease and is the causal mutation tested or is the test based on a nearby marker? Is it a complex disease and does the test provide a risk of acquiring this disease during lifetime rather than a 100% prediction? For veterinarians it is important to have knowledge about these topics in order to accurately advise clients. Currently, laboratories are moving towards panel testing, where a large number of tests is offered for a reduced price for a single breed, or for a group of breeds. It is important to educate clients about what is best with regard to breeding. Testing negative for all DNA tests available for a single breed, might sound attractive, however bears the risk of excluding important breeding animals from the population, leading to increased inbreeding and problems in the near future. During this lecture, the research behind development of DNA tests for diseases is being discussed which will help to understand and interpret DNA test results for use in clinical practice.