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NEW DNA TEST LAUNCHED FOR HUNGARIAN VIZSLAS

Animal Health Trust finds genetic mutation for rare neurological disease in smooth-haired Hungarian Vizslas and promptly launches DNA test

A rare neurological condition, cerebellar ataxia, has been identified in a small number of smooth-haired Hungarian Vizslas. Cerebellar ataxia is an aggressive and progressive condition which affects gait and coordination from around two to three months of age, and for which there is no treatment. Affected dogs are euthanased on welfare grounds at the advanced stages of the disease.

The genetic mutation responsible has been discovered by researchers at the Kennel Club Genetic Centre at the Animal Health Trust, in association with the neurology team at the Royal Veterinary College. A DNA test for this emerging disease will be available from the Animal Health Trust DNA Testing Service from Monday 22 February by visiting www.ahtdnatesting.co.uk. The test will cost £48.

How the mutation was found

In order to find the mutation responsible, the AHT used whole genome sequencing technology to study all 2.4 billion letters of DNA from just one affected Vizsla.

Traditionally, a genetic investigation into a disease of this nature would require DNA samples from at least twelve affected dogs and the same number of healthy control

dogs from the same breed. Now, advanced genome sequencing technology and the use of state-of-the-art computer analysis allows every letter of DNA from a single affected dog to be interrogated and compared to a bank of genome sequences of healthy dogs from different breeds, in order to find the change in DNA responsible for a specific inherited disease. This approach allowed the genetics of cerebellar ataxia in the Hungarian Vizsla to be investigated straight away, without collecting additional DNA samples.

The causal mutation was quickly identified as a single letter change in the 2.4 billion letter DNA code. Once this mutation had been pinpointed, it was confirmed by screening healthy Hungarian Vizsla DNA samples. Only the Hungarian Vizslas with cerebellar ataxia had two copies of the genetic mutation needed to cause the disease.

Dr Cathryn Mellersh, Head of the Kennel Club Genetics Centre at the AHT, said: "Normally, in our genetic investigations, it can be really challenging to look for a genetic mutation when we only have DNA from one or two affected dogs. However, that's no longer the case. By using whole genome sequencing technology, the same technology which is at the heart of our Give a Dog a Genome research project to create the UK's largest canine genome bank, it is much, much easier to look closely at all of the DNA in a dog's genome and it's possible to find a rare genetic mutation relatively quickly by comparing that genome with the genomes of healthy dogs from different breeds.

"The identification of this mutation and the development of a DNA test demonstrates the huge potential of the Give a Dog a Genome project, and proves how gaining a wealth of new information about the canine genome, from a vast number of breeds, will enable us to find genetic mutations much more effectively in the future."

DNA testing advice

Cathryn continued: "As this condition in the Hungarian Vizsla is quite rare we're not expecting to find several affected dogs through DNA testing, but it is crucial to identify any possible carriers in order to prevent any more puppies being born with this horrible neurological disease, and to stop it becoming a bigger problem in future lines.

“The carrier rate for this condition is estimated at approximately 1 in every 100 smooth-haired Hungarian Vizsla. We’ve had a good level of interest in this research so far from Vizsla breeders and we’re confident that the Vizsla breeding community is keen to get this mutation under control, and in time, eradicate it safely from their breed altogether.”

Caroline Kisko, Kennel Club Secretary, said: “The Kennel Club Genetics Centre at the Animal Health Trust is making strides in genetic research, which will go a long way in helping to protect the future of dog health.

“The identification of the genetic mutation for cerebellar ataxia in Hungarian Vizslas and the resulting DNA test go to show what fantastic potential the Give a Dog a Genome initiative has to improve the health of all breeds, as evidenced by this research. We are looking forward to seeing how genetic research will continue to develop at the Animal Health Trust in the near future.”

For more information about the Give a Dog a Genome project, go to:

www.aht.org.uk/gdg

Ends

For further information, please contact:

Katherine Lawson, AHT press office, 01638 751000 ext 1511 or 07341 737 746

Photographs & Videos:

Images can be requested from the AHT press office.

Additional notes:

- The Animal Health Trust (AHT) is an independent charity, employing over 200 scientists, vets and support workers. It aims to improve the health and welfare of horses, dogs and cats through research. It also provides specialist referral services and continuous education to vets. Visit the website at www.aht.org.uk