



## media *release*

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**NEW DNA TEST TO HELP BEAGLES FIGHT  
DEGENERATIVE NEUROLOGICAL DISEASE**  
**Kennel Club Genetics Centre at the AHT launch DNA test for NCCD**

Scientists from the Kennel Club Genetics Centre at the AHT have successfully identified a genetic mutation which causes a severe progressive neurological disorder in Beagles. A DNA test has been launched which could eliminate the condition before it becomes a widespread problem in the breed in the UK.

The development of this DNA test, for Neonatal Cerebellar Cortical Degeneration (NCCD) in Beagles, illustrates the benefits for dogs that can result when breeders, vets and scientists work together.

When Beagle breeder, Jacqui Walton, brought a four week old puppy into the AHT Small Animal Centre it was examined by veterinary neurologist Elsa Beltran who diagnosed NCCD. Unfortunately there is no cure for NCCD and so the puppy was sadly put to sleep. Jacqui was devastated, but wanting to do everything possible for her beloved breed, she donated the Beagle's body to the AHT's research team in the hope they could identify the mutation responsible for the condition.

Cathryn Mellersh, Head of Canine Genetics at the AHT, said: "We normally need DNA from a minimum of 12 affected dogs and the same number of healthy dogs to find the mutation responsible for any inherited canine disease. But NCCD is, fortunately, a rare disease and it was likely that it would take a long time to collect DNA from this number of affected dogs."

So PhD student, Oliver Forman, decided to try a different way of tracking down the mutation. Oliver sequenced a molecule called RNA, that is derived from DNA, from the affected puppy and successfully identified the mutation that caused NCCD. RNA sequencing is typically used to investigate which genes are switched on in particular tissues so although the technique isn't new, using it to find mutations is.

"As far as we know, this is the very first time RNA sequencing has been used in this way, in any species, to identify a disease-associated mutation" said Dr Mellersh.

"Although this particular puppy's story was a very sad one, the breeder did all the right things by bringing the puppy to the AHT where our highly skilled veterinary neurologists were able to team up with the Kennel Club funded genetics team to solve this disease."

The NCCD mutation is rare in the UK and the AHT estimates around five out of every hundred Beagles are probably carriers. Carriers, which are dogs with a single copy of the mutation, will not suffer from NCCD but dogs with two copies of the mutation, that can result from a mating between two carriers, will suffer from the disease.

The genetics team believes NCCD may be a newly emerging condition and having a DNA test available will enable Beagle breeders to 'nip the condition in the bud'.

Because the disease has a recessive mode of inheritance it is perfectly safe to breed with carriers, provided they are mated to a dog that does not carry the mutation.

"Because we have identified the mutation for NCCD before it has had a chance to become very widespread, breeders have the means to eliminate this mutation from the breed with very little trouble, before the disease ever becomes a problem in the UK" Dr Mellersh explained.

Steve Dean, Kennel Club Chairman said: "This is an example of good science being used as an early warning mechanism for a disease, which could cause problems if left unchecked. We are delighted that scientists at the Kennel Club Genetics Centre at the Animal Health Trust have been able to develop a DNA test at such an early stage, which will help to ensure that breeders can breed dogs that are free from the condition in the future."

The DNA test for NCCD is available from the AHT and will be offered in combination with a DNA test for Musladin-Lueke syndrome (MLS) for the single price of £48. Full details are available at [www.ahtdnatesting.co.uk](http://www.ahtdnatesting.co.uk).

**Ends**

**For further information, please contact:**

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**Additional notes:**

- The Animal Health Trust 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](http://www.aht.org.uk)
- The Kennel Club Genetics Centre is led by Dr Cathryn Mellersh and Dr Sarah Blott, two of the AHT's genetics experts. Both have pioneered screening tests to identify a dog's genetic status and minimise the risk of producing affected puppies
- The Kennel Club Charitable Trust has donated over £6.3m since its formation to help fund research into dog diseases and to canine support and welfare charities. Money made by the Kennel Club, through events such as Crufts, goes back into the Kennel Club Charitable Trust and into education and health initiatives to help all dogs.