



Research program : the canine dilated cardiomyopathy

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The main objectives are :

- clear the transmission mode of pathology by analyzing pedigrees,
- **collect DNA samples of dogs (affected and not)** in order to research the gene(s) and mutation(s) responsible for DCM,
- develop a genetic test for diagnosis if possible. This test would be useful for the breeders to detect DCM earlier and help them in their selection policy.

To carry out this research, all information on the genealogy and the clinical status of the dogs would be useful (copy of cardiac examination and pedigree). Blood samples will be necessary on both affected and healthy dogs.

The canine dilated cardiomyopathy (usually called DCM) is a genetic disease that affects various canine breeds of which **Irish Wolfhound** (Dobermann, Boxer, Newfoundland, Great Dane, Cocker and more too). This affection results in a dilation of cardiac cavities and a thinning of the cardiac walls. This affection leads to cardiac insufficiency. In many cases, the death of the dog occurs suddenly.

The first clinical signs of DCM, when they can be recognized, are intolerance to exercise and loss of weight. Dogs may cough and have respiratory difficulties, muscular weakness, abdominal distension or faintness. Furthermore, the cardiac auscultation frequently reveals heart murmur and/or arrhythmias.

Diagnosis of this disease is realised by a veterinary surgeon who practices an auscultation with specific examinations as **echocardiography, Doppler** and **electrocardiography**.

A genetic origin is suspected for this illness. Although the monogenic or polygenic character (one or more gene affected) is not simple to highlight. Nevertheless, in certain breeds, an alteration in a single gene could lead to the disease.

In 2006, ANTAGENE and its collaborators began to develop a research program on DCM of Irish Wolfhound. Since 2008, this program has been included in a wide European project (LUPA). Thanks to this project, Dog profit of high technological platform and resources to discover genetic causes of many inherited disorders. LUPA gathers efforts of European researchers (22 teams in 11 countries) and gives a real opportunity to progress in the understanding of the genetic cause of the disease. Program about DCM requires blood samples in order to extract DNA with high quantity and quality.

We collaborate with :

- canine associations and breeders (RALIE,...),
- veterinary surgeons specialized in Cardiology (Studying Group of Cardiology of the French Association of Vets for Pets,...),
- the veterinary school of Alfort (Cardiology Unit, UMR955 ENVA-INRA).

We remind that this work will be undertaken in total confidentiality by ANTAGENE. No personal result will be communicated to the stockbreeders during and at the end of this research program. Furthermore no financial participation is required.

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Information on www.antagene.com