

Memorandum of Understanding

This memorandum records the goals and intentions behind a research project to be undertaken by Dr. Hannes Lohi of the Folkhälsan Institute of Genetics in Helsinki, Finland, with the collaboration of Dr. James Mickelson, Professor in the Department of Veterinary and Biomedical Science at the University of Minnesota College of Veterinary Medicine in St. Paul, Minnesota, to be funded by the ABCA Health & Education Foundation, Inc. ("Foundation"), in the amount of \$33,593 USD.

1. The purpose of the project is to identify the gene(s) and causative mutation(s) producing Early Adult Onset Deafness in Border Collies, leading to a definitive genetic test that will identify dogs as Normal, Carrier or Affected with the disorder.
2. The Foundation will collect DNA samples from North American and UK dogs to be used in the project, in addition to samples obtained by the researchers. Dr. Lohi will include as many of the samples supplied by the Foundation as possible, consistent with the project plan.
3. The samples obtained by the Foundation will be initially delivered to Dr. Mickelson's lab in Minnesota. Dr. Mickelson will be responsible for extraction of DNA and transmission to Dr. Lohi of the amount required for this project. Any DNA over and above that amount, plus any samples from which DNA is not needed for the project, will remain the property of the Foundation, and will be stored in Dr. Mickelson's lab for the duration of the project. The Foundation will also have equal rights to the data generated from any Whole Genome Sequencing of samples they have obtained.
4. The Foundation shall have access to all data developed through the project, and shall receive reports on the progress of the project at appropriate intervals.
5. Dr. Lohi and Dr. Mickelson shall use their best efforts to publish the results they obtain through the project. Neither of them will apply for a patent based on the results of the project, and they will use their best efforts to ensure that no entity with which they are affiliated will apply for such a patent. It is the intent of all parties that any discoveries made through the project will be freely available to legitimate individuals and companies for the purpose of developing genetic tests for EAOD in Border Collies.

Signature: Helsinki 22nd August 2016



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By: *Eileen Stein*
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