



**Update July 2017**

## **Research into Sebaceous Adenitis**



As you may be aware the Japanese Akita Inu Club has been working with the Give a Dog a Genome project at the Animal Health Trust (AHT) to use whole genome sequencing to identify the genetic markers which are involved in Sebaceous Adenitis (SA). The sequencing has now been completed by the external laboratory and the data has been made available for the AHT to download. The Give a Dog a Genome project and the associated funding from the Kennel Club in the UK has given this research a good start. However, in order to have a good expectation of being able to develop a test, the Japanese Akita Inu Club (JAIC) in the UK and the Japanese Akita Club America (JACA) have begun working together to raise the money to support this additional research and to encourage owners to submit samples to the AHT in order to be involved in the studies.

### **What happens next?**

The amount of data generated for each sample is enormous, around 80-90 GB. It takes time (about 1 week) and a great deal of computing power to download and process the data so that it is ready for analysis. Once this stage is completed the Japanese Akita Inu Sebaceous Adenitis data will be ready for further analysis.

### **How can this be used to move closer to a test for SA?**

SA is thought to have a complex mode of inheritance, which means that more than one genetic variant contributes to the development of SA in each dog. In order to develop a DNA test for SA, all of the variants involved in SA need to be identified. In addition, it is possible that non-genetic factors may play a role also. This means that identifying the genetics variants involved will be difficult, and the following steps are required at the very least.

1. **Perform a genome-wide association study (GWAS) to use in combination with the whole genome sequence information that they have.** This requires:
  - At least 50 samples of SA affected dogs
  - At least 50 samples of non-SA affected dogs (dogs over the age of 8 years – older is preferable)
  - Cost = approximately £10,000 (£100 per dog for the lab work and analysis).
2. **Perform two additional full genome sequencing**, one of another SA dog and one healthy control dog
  - Cost = £4,000

JAIC and JACA would like to enlist the support and assistance of the Japanese Akita Inu community worldwide to help us gather the following samples:

- **SA-affected dogs** – any age, with Japanese Akita Inu pedigree and an official veterinary diagnosis
- **Healthy control dogs** – over the age of 8 years with Japanese Akita Inu pedigree, no signs of SA

Sampling kits can be obtained from:

- The AHT – [canine.genetics@aht.org.uk](mailto:canine.genetics@aht.org.uk) and requesting a swab kit for Japanese Akita Inu SA research.
- Kate Huggins – [SAResearch@japaneseakita-inu.co.uk](mailto:SAResearch@japaneseakita-inu.co.uk) for kits to be sent or for testing at UK Club shows
- Bekki S. Leu – [bekki@akita-inu.com](mailto:bekki@akita-inu.com) for swab testing at JACA events within the United States, and swab kits to be sent out to AKIHO North America Branch members

Monetary Donations towards covering the costs of the testing can be made:

- UK donations via PayPal to [paypal@japaneseakita-inu.co.uk](mailto:paypal@japaneseakita-inu.co.uk) with note: *SA Research project*
- US donations through JACA (a 501(c)3 non-profit organization) via PayPal to [donations@akita-inu.com](mailto:donations@akita-inu.com) with note: AHT

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**Note:** The samples are handled with complete confidentiality. No one outside of the research team at the AHT will know the details of the dogs submitted for the research, the clubs coordinating the project will only know how many SA and Control samples have been submitted but will not receive any other information.

