

As of the start of 2006, cheek swabs have been collected from 169 JRTs. DNA isolation from the last of the cheek swabs is now being completed. The stored DNA will await the time when we can compare the gene defect in the JRT to the one that will be isolated from the Dalmatian.

In collaboration with colleagues at Texas A&M University and the University of California at Davis, we performed a statistical analysis on the pedigree assembled from the submitted samples. The results did not provide a simple mechanism of inheritance of the deafness but it did give us some information. That analysis has been submitted for publication in the journal Genetics. At the very least this will give greater visibility to the presence of deafness in the breed and that it is under study.

A grant proposal was submitted a year ago to the Morris Animal Foundation to continue our analysis of Dalmatian DNA - the obligatory step before analysis of JRT DNA. The proposal was awarded (based on merit) but funds were not available to actually perform the work (\$85,000). This proposal is being resubmitted this spring in the hope that the funds will become available to complete this critical work.

Several areas of collateral progress have brought us closer to the point where we can actually test the JRT DNA. First, the canine genome project has been completed. This means that once the approximate location of the gene defect responsible for deafness is located. It will be possible to very quickly hone in on the actual gene, sequence it, and determine its abnormalities.

Second, my colleague Keith Murphy and his students at Texas A&M University recently identified and sequenced the gene for merle in the dog. This work was considered so momentous that this prestigious journal featured it on that issue's cover, and National Geographic also featured it. Merle is one of two pigmentation genes associated with deafness - the other being piebald, the gene in JRTs. Although JRTs and Dalmatians and many other breeds with pigment associated deafness are homozygous for the recessive allele of the merle gene, Murphy showed that deafness in Dalmatians was not the result of a gene defect in this recessive allele, narrowing down the candidates responsible for the problem we are pursuing.

The work continues, and we will have a solution one day.

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[www.lsu.edu/deafness/deaf.htm](http://www.lsu.edu/deafness/deaf.htm)