

I have voted yes. My reasoning is included in what follows.

In reading many posts about whether or not the DCA should begin to discuss recommending registration of the LUA Dalmatians to the AKC, I have been struck by the requests by several members for more research. I decided to look at the research from the point of view of a scientist and ask what we know, what we can assume, and what additional information we want before we are able to make an informed decision.

1. What we know. We know that higher than normal uric acid levels in the Dalmatian are caused by a recessive gene. We know that all AKC Dalmatians are homozygous for the recessive gene. Because all AKC Dalmatians are homozygous for the recessive gene, we know that the only way to introduce the normal gene is through crosses with canines that carry the normal gene. We know that relative to other canines, AKC Dalmatians have significantly higher levels of uric acid in their urine. We know that relative to all other canines, AKC Dalmatians have the highest rate of urate stone formation. We know that the genetic defect in uric acid metabolism occurs in a transporter protein and that it is coded by a gene located on chromosome 3. We know that DNA from AKC Dalmatians and LUA Dalmatians is indistinguishable using current state of the art DNA technology.

2. What we can assume. We can assume that higher levels of urate in the bladder of Dalmatians will increase the risk of urate crystal formation based on the known properties of urates in solution. We can reasonably assume that more urate crystals in the bladder will result in more stones forming. We can also assume that very little "Pointer DNA" remains in the LUA Dalmatians. As offspring obtain half their DNA from each parent, the amount of DNA from any individual ancestor will decrease by  $\frac{1}{2}$  in each successive generation. After 5 generations we can predict  $\frac{1}{32}$  of each original parent's DNA will remain, after 10 generations  $\frac{1}{1024}$  of each original parent's DNA will remain, and after 15 generations, only  $\frac{1}{32768}$  of the original parent's DNA will remain. Even with the fact that genes are on chromosomes limiting the independence of their assortment, it is reasonable to assume

that less than 1/1000 of the original Pointer DNA remains in 12th generation LUA Dalmatians.

3. What we need to know to make informed decisions. Have any of the LUA Dalmatians formed urate stones? Similarly, have the LUA Dalmatians had any of the Pointer specific health problems. We should formally survey all traceable LUA Dalmatian owners on the incidence and types of stones formed in these dogs. Though the number of reports may be small, stone incidence data is important for reaching an informed decision regarding AKC registration of LUA Dalmatians.

Based upon my understanding of all the research to date, I believe that it is time for the DCA to consider recommending registration of LUA Dalmatians to the AKC. The potential benefits of addressing the problems associated with high uric acid levels in my mind far outweigh the risks presented by introducing a few Pointer genes into AKC Dalmatians.

John A. Wilson, Ph. D.  
Member, DCA Sub Committee on Deafness  
402 551-1980  
[jwilson3@cox.net](mailto:jwilson3@cox.net) or [jwilson@mpsomaha.org](mailto:jwilson@mpsomaha.org)