WINN FELINE FOUNDATION
For the Health and Well-being of All Cats

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W 12-022 - Molecular Characterization of Bengal Progressive Retinal Atrophy

This study investigated the genetics of Bengal progressive retinal atrophy in the Bengal breed of cat. The objective of this study was to genetically sequence a candidate gene found in a genomic region linked to the disease from both affected and unaffected Bengal cats. The candidate gene, FAM161A, has been demonstrated to cause progressive retinal atrophy in humans. The goals were to sequence both the RNA copy of the gene and if no variants were found, to sequence the noncoding regions of the gene to detect potential splice variants.

FAM161A RNA isolated from the retinas of affected and unaffected cats were completely sequenced. No differences were detected between the two transcripts. The 5' untranslated as well as some intronic data were generated. Differences in the noncoding region of the gene were found. The affected cat was homozygous and distinct from the control cat. However, this difference did not segregate with the disease; thus, *FAM161A* was effectively eliminated as a candidate gene.

Additional cats were added to the association study and a new, refined linkage region was identified. A gene related to feline progressive retinal atrophy (CEP290 in Abyssinians) is located within this new linkage region. Genome sequencing is being pursued by the investigators to determine if this is a marker for the condition in Bengal cats.