Kimberly A Greer, Aging Sci 2016, 4:2(Suppl)
http://dx.doi.org/10.4172/2329-8847.C1.001

Kimberly A Greer

Prairie View A&M University, USA

THE DOG AS AN IDEAL MODEL FOR AGING BIOLOGY INVESTIGATIONS

With many caveats to the traditional vertebrate species pertaining to biogerontology investigations, it has been suggested that a most informative model is the one which:

1. Examines closely related species, or various members of the same species with naturally occurring lifespan variation
2. Already has adequate medical procedures developed
3. Has a well annotated genome
4. Does not require artificial housing and can live in its natural environment while being investigated
5. Allows considerable information to be gathered within a relatively short period of time.

The domestic dog unsurprisingly fits each criterion. The dog has already become a key model system in which to evaluate surgical techniques and novel medications because of the remarkable similarity between human and canine conditions, treatments, and response to therapy. The dog naturally serves as a disease model for study, obviating the need to construct artificial genetically modified examples of disease. Just as the dog offers a natural model for human conditions and diseases, our laboratory has established the canine correlates of human aging, demonstrating the size-longevity correlation in the domestic dog. Further, we have evaluated genotype and longevity gene associations within and between the canines of variable lifespan. Our biochemical studies demonstrate correlations pertaining to the GH/IGF-1 pathway, outining surprising differences amongst the four genders within our canine population of greater than 77 pure breeds and mixed breed animals. Currently, evaluation of primary fibroblasts delineates correlations of size, longevity and oxidative stress resistance as well as oxygen consumption rates within the species.

Biography

Kimberly A. Greer graduated from Texas A&M University, College of Veterinary Medicine, in College Station, Texas with a specialty in Molecular and Developmental Genetics. After working on neural tube defect genetics, Kimberly moved her focus to canine genetics during her post-doctoral studies. She established her own laboratory at Indiana University east following extensive study at NIH and Eli Lilly. Here, she discovered the genotype responsible for necrotizing meningoencephalitis, an invariable fatal canine disease. Following a laboratory move to the North Dakota State University to establish a Genomics Research Institute, She returned to Texas where she currently continues research into the genetics of aging at Prairie View A&M University.

kagreer@pvamu.edu

Notes: