

PROGRESS REPORT



Gene Therapy for Osteoarthritis in Dogs

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SPONSOR: Samoyed Club of America Education and Research Foundation

SUMMARY: Researchers will use a new gene therapy approach to treat osteoarthritis in dogs.

THE PROBLEM: Osteoarthritis is a long-term disease that causes pain in the joints and limits physical activity for those affected by it. This disease affects not only humans but also dogs, with as many as 30-40% of dogs affected. The pain and reduced activity levels can have debilitating effects on a dog's overall health, preventing them engaging in many activities. There are some OA treatments available such as pain medications, joint supplements, and even surgical management. However, these treatments only focus on providing temporary relief to pets and does not slow or stop further damage. New treatment options are needed to directly treat osteoarthritis and heal the damage to joints, restoring dogs to a mobile, pain-free life.

THE PROJECT: The team will create a next generation gene therapeutic that will directly act on the cells in the joint. Their goal is to encourage the cells in the joint to produce specific proteins that will not only control inflammation but also stimulate joint tissue regeneration.

PROJECT UPDATE: The team has made excellent progress in their study aims.

In aim 1, the team successfully expressed the proteins of interest in canine joint cell lines. They're performing ongoing experiments to take a closer look at the function of these proteins' ability to control inflammation and find the most successful combination of proteins.

For aim 2, the team is in progress of creating the tools needed to target joint cells specifically with products identified in aim 1.

In the next 6 months the team will finish testing separate components of their novel treatment in dog's joint cells to ensure that they are working as intended. This will culminate in a final bench-top trial in the last 6 months of the study where they will combine the most effective components and test the full, refined osteoarthritis treatment in dog joint cells.

POTENTIAL IMPACT: If successful, this treatment could offer relief to the millions of dogs affected by osteoarthritis and provide a new therapeutic tool for veterinarians.

Thanks to the generous sponsors of this study!