



Understanding the Role of Specific Cells in Lymphoma Spread Daisuke Ito, DVM, PhD, University of Minnesota

Results: Researchers Discover New Therapy Target for B-Cell Lymphoma in Dogs

Lymphoma is one of the most common cancers of dogs, and diffuse large B-cell lymphoma (DLBCL) is a particularly aggressive cancer. Unfortunately, the average survival time for dogs with DLBCL, even when treated with chemotherapy, is only one year. Despite efforts to develop better chemotherapy protocols, this statistic has not changed for more than 20 years; therefore, new treatment approaches are needed to improve the outcome of dogs with DLBCL. Although any dog at any age can develop DLBCL, Golden Retrievers, Labrador Retrievers, Cocker Spaniels, Rottweilers, Boxers, German Shepherd Dogs and Doberman Pinschers are among the breeds known to be at high risk for this cancer.

In hopes of finding new treatment targets, a Morris Animal Foundation–funded investigator at the University of Minnesota, Dr. Daisuke Ito, studied a specific signaling pathway as a potential therapeutic target for canine DLBCL. A signaling pathway is a group of molecules that works together to control one or more cell functions, such as cell division or cell death.

Through his studies of canine DLBCL cells in the laboratory, Dr. Ito found that a signaling pathway known as “alternative NFκB pathway” is activated in DLBCL and is indeed critical for DLBCL tumor growth. Inhibiting this pathway killed canine tumor cells, which suggests that the alternative NFκB pathway is a promising new therapy target to help combat lymphoma in dogs.

Dr. Ito and his team are continuing their research, including screening drugs to find those that can inhibit activity of the alternative NFκB pathway. If successful, this strategy will help find potential new treatments for DLBCL, a much-needed tool for veterinary oncologists who treat patients with DLBCL.

This study has also contributed to the career development of a promising young research scientist. In 2013, Dr. Ito was appointed assistant professor at the College of Veterinary Medicine at the University of Minnesota, where he will continue his research in veterinary oncology. (D12CA-302)