Research Briefs
The Role of NF-kappaB

Basic and translational researchers Dr. Michael May and Dr. Nicola Mason are working together to evaluate the role of NF-kappaB in canine cancer development and the potential therapeutic use of NBD peptide in the treatment of canine cancer.

NF-kappaB effects the regulation of genes linked to immune responses, differentiation, cell growth, and the death of cells. It is found in many solid tumors where it contributes to reproduction of malignant cells and resistance to chemotherapy of malignant cells.

This work has provided the basis for a Phase I clinical trial to evaluate the effects of NBD peptide on NF-kappaB activity in dogs with relapsed, drug-resistant lymphoma. Further details of the clinical trial can be found at http://research.vet.upenn.edu/vcic.

While this trial is specifically for canine patients with lymphoma, the clinical, biological and genetic similarities between canine lymphoma and Non-Hodgkin’s lymphoma (NHL) in humans indicates that findings in dogs may provide valuable information for humans with NHL.

Penn Shelter Canine Mammary Tumor Program

A team of clinicians at the Matthew J. Ryan Veterinary Hospital led by Dr. Karin Sorenmo, Dr. Michael Goldschmidt, Dr. David Holt and Dr. Michael Moyer, V’90, Rosenthal Director of Penn’s Shelter Medicine Program, received funding from Reid and Krista Buerger to study similarities between canine mammary tumors and breast cancer in women.

Mammary gland tumors remain the most common tumors in intact female dogs and represent a common cause of disease and premature death in dogs around the world. Studies have identified many similarities between canine mammary tumors and breast cancer in women in terms of epidemiology, biology, dietary risk factors and clinical behavior, as well as hormonal association. The development of mammary tumors in dogs is dependent on exposure to ovarian hormones and the tumor risk can be significantly reduced by spaying at an early age. The risk for developing breast cancer in women is also associated with the cumulative exposure to bio-available estrogens, suggesting that similar hormone-driven mechanisms might be linked with breast cancer development in both species.

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