



RESEARCH PROGRESS REPORT SUMMARY

Grant 02864-A: Luteinizing Hormone Receptor Activation in Canine Hemangiosarcoma Cells

Principal Investigator: Michelle Kutzler, DVM, PhD

Research Institution: Oregon State University

Grant Amount: \$11,718

Start Date: 2/1/2021 **End Date:** 1/31/2022

Progress Report: Mid-Year 1

Report Due: 7/31/2021 **Report Received:** 7/29/2021

(The content of this report is not confidential and may be used in communications with your organization.)

Original Project Description:

Hemangiosarcoma is an aggressive, silent cancer that sometimes snares its victims without any sign of illness. In the U.S., hemangiosarcoma is believed to be responsible for the deaths of tens of thousands of dogs each year. German Shepherd Dogs, Golden Retrievers, and Labrador Retrievers are most commonly affected but this cancer affects all dogs. While there is no cure, early surgical intervention and chemotherapy treatment may prolong the lives of dogs afflicted with hemangiosarcoma. Additional treatment options are needed to increase life expectancy and possibly even prevent the development of this deadly disease. Several studies have shown that spayed female dogs have a two- to ten-fold increase for developing hemangiosarcoma compared to intact female dogs. This may be due to overproduction of luteinizing hormone (LH) following spay or neuter. Investigators have previously demonstrated that hemangiosarcoma tissues collected from dogs have binding sites for LH. The proposed research will determine if LH binding to these sites increases cancer cell growth. The results of this research may allow for a better understanding of the relationship between spaying or neutering and the development of hemangiosarcoma. In addition, future development of a method to reduce LH secretion in spayed or neutered dogs may lower the risk for some breeds to develop hemangiosarcoma.

Publications: There are no publications from this research yet.



Presentations:

The results from the LHR immunocytochemistry will be presented as a virtual poster at the 2021 Oregon State University Celebrating Undergraduate Excellence conference in September 2021. There are no other presentations from this research yet.

Report to Grant Sponsor from Investigator:

In the United States, spaying and neutering of dogs and cats is commonly performed to prevent the birth of unwanted pets. However, surgically removing the ovaries or testes may have unexpected consequences. Dogs that have been spayed or neutered have an increased risk for developing obesity, urinary incontinence, hypothyroidism, hyperadrenocorticism, diabetes, cruciate ligament tears, hip dysplasia, and cancer. Hemangiosarcoma is a rapidly growing, highly invasive cancer arising from the lining of blood vessels of any tissue. More than half of all canine hemangiosarcoma tumors are in the spleen. Spayed female dogs are reported to have two to ten times the risk for developing splenic hemangiosarcoma compared to intact female dogs. This funded study is investigating the hormonal and cellular relationships between spaying/neutering and the development of splenic hemangiosarcoma so that new treatments may be available in the future to extend life expectancies of dogs with cancer.