

1. [Characterizing Circulating Nucleosomes in the Plasma of Dogs with Lymphoma](#)

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Characterizing Circulating Nucleosomes in the Plasma of Dogs with Lymphoma

2020 VCS Virtual Conference

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## INTRODUCTION

Nucleosomes consist of DNA wrapped around a histone octamer core like thread on a spool to condense DNA as chromatin into chromosomes. Diseases such as cancer or inflammation lead to cell death which causes chromatin fragmentation and release of nucleosomes into the blood. The Nu.QTM platform exploits the different compositions of circulating nucleosomes in the blood of humans that occurs with disease and has been used to detect and identify cancer even at early stages. The objectives of this study are to quantify and better characterize nucleosomes in dogs with various stages of lymphoma (LSA) using the Nu.QTM platform of assays.

## METHODS

A total of 70 dogs diagnosed with LSA and 65 healthy controls were recruited for this study. The LSA samples were recruited from TAMU or purchased from various biobanks. All control samples were recruited from TAMU. GraphPad Prism v.8 was used to make comparisons between LSA and controls and within the LSA cohort.

## RESULTS

Dogs with LSA had an approximately 10-fold increase in their plasma nucleosome concentrations compared to controls (AUC 84.6%). Nucleosome concentrations increased with the stage of the disease.

## CONCLUSION

The Nu.QTM platform was able to reliably detect elevated nucleosome concentrations in the plasma of dogs with LSA. Furthermore, it appears that nucleosomes may be useful for differentiating cancer from healthy individuals in canines. Further testing is underway to better characterize LSA and optimize the Nu.QTM platform for canine LSA detection.

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