For Veterinarians

D.O.G

Dog Oncology and Genomes project

Thank you for assisting in collecting samples for and being part of the D.O.G (Dog Oncology and Genomes) project. This project is an important step towards understanding the development of specific cancer types in dogs and also of comparative value for human research. The project is funded by the NIH research grant: *Enhancing the dog as a model for human cancers: from genome sequence towards clinical trials*. The project is lead by professor Kerstin Lindblad-Toh at Uppsala University.

This research has 2 main purposes:

1) To improve understanding of the dog genome

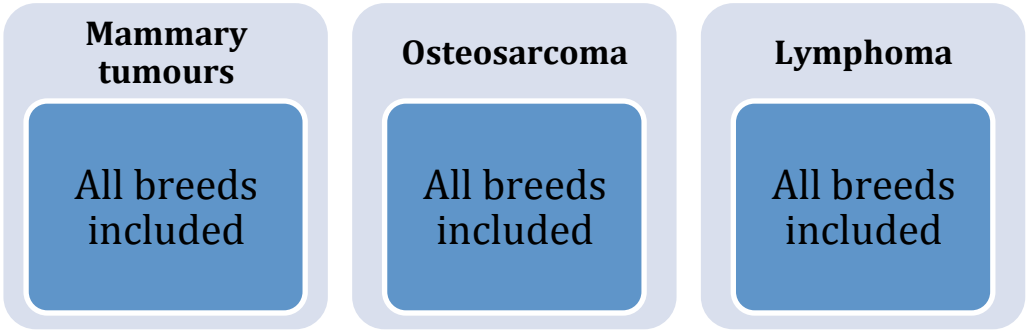
2) To improve understanding of three common tumor types in dogs, which are:
   Mammary tumors
   Osteosarcoma
   Multicentric lymphoma

We have provided a description to guide you in which samples we are collecting and for what purpose.

Tumour normal sequencing project:

Purpose: The purpose of this project is to identify somatic mutations in tumour tissues and to evaluate alterations in gene expression by RNA sequencing. Further the study would like to link identified variation with clinical disease stage, patient outcome and other phenotypic variation.

Breeds and tumour types included:



Any mammary tumour, osteosarcoma, lymphoma. Location, size, stage should be included if possible.

Samples collected from each individual:

1. **Normal: A)** EDTA blood 2ml and/or B) cheekswab

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2. **A) Tumour tissue in RNAlater** (Any material which can be taken safely from the tumour without compromising diagnosis, grading or evaluation of tumour margins). Preferably submit adjacent tissue for separate histopathology evaluation (see practical tissue guide**)** Please take two different samples if possible (one for DNA and one for RNA). Samples should be shipped directly or stored 24 hours at 4C before frozen at -80 C and shipped at a later date.

And / Or

2 B) Tumour needle aspirates in RLT-buffer and matched cytology slide.
For many tumours the size or the treatment procedure does not allow tissue biopsies to be taken. In these cases needle aspirates can be taken from the tumour. The needle should preferably be passed through the tumour and a suction using a syringe should be applied as this increased cell yield. Needle aspirates should be gently suspended in 600 ul RLT buffer by gently suctioning the RLT buffer in and out of the syringe. The sampling can be repeated and resuspended in the same RLT buffer. A paired needle aspirate should be taken and a cytology slide prepped to be able to evaluate that samples were representative. Samples should be frozen at –80C and shipped frozen.

3) To gain most information from our samples we would like to have as much phenotypic information as possible taken at the time of sampling or at a later stage.

Phenotypic information	
Breed	
Age	
Neuter status and age of neutering	
Copy of histology report*	
Size, location and stage of disease	
Significant comorbidities	
Medication at the time of sampling	
To be collected later:	
Therapy for tumour	
Disease free interval	
Local recurrence or distal metastasis	

* When it is ready.