The Humanimal Hub

Collaboration Café

Issue 1 | December 20

In this issue:

Professor Jo Morris and Dr Tomoko Iwata tell us about their work developing liquid biopsies for bladder cancer, and discuss how combining human and veterinary research expertise could help both humans and animals with the disease.

A Chat in the Collaboration Café

Can you tell Hub members about your work on bladder cancer?

Jo and Tomoko: We have been trying to develop a method of 'liquid biopsy' for canine bladder cancer. Normal methods of diagnosing bladder cancer often involve sedation or anaesthesia to pass a catheter or endoscope and take a tissue biopsy. We have tried to develop a less invasive blood test instead,using Tomoko's expertise in the human field with liquid biopsy for human bladder cancer (Pritchard et al 2020).

The 'liquid biopsy' test is based on detecting DNA from shed tumour cells in the blood or urine. The test could also be used to monitor any response to treatment to see if the cancer reduces in size or responds completely. Since the tumour DNA is only present in tiny quantities in the blood, a very sensitive and specific PCR test, such as digital droplet PCR, is needed. We have been working on the technology to try and achieve this.

Why do you think bladder cancer is a good candidate for a One Medicine approach?

J & T: Bladder cancer in dogs and humans has many similarities in terms of tumour growth, diagnosis and management options. Although there are some differences, for example, the actual genetic pathways that are affected, it is still easy to extrapolate principles between the species.

HUB MEMBER PROFILES:

Professor Jo Morris and Dr Tomoko Iwata

From left to right:
Professor Jo Morris I Dr Tomoko Iwata

Professor Jo Morris is Professor of Veterinary Oncology (Small Animal Clinical Sciences) at the University of Glasgow. Her clinical research interests include mammary tumours in cats and dogs and the identification of serum biomarkers in other tumour types, such as bladder cancer.

Dr Tomoko Iwata is a Senior Lecturer (Medicine) whose research interests are in the mechanisms of bladder cancer progression and immunotherapy response.

They both recently presented at the INSPIRE conference which took placein Glasgow in November 2020.

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You both presented at the recent INSPIRE conference – can you tell us more about that?

J & T: The 'Current Comparative Topics Conference' was organised by students as part of the INSPIRE programme which seeks to encourage undergraduate students to engage with research and consider it as a career pathway. The students wanted to bring together researchers in the medical, veterinary and dentistry fields with an interest in comparative studies, to encourage discussion across disciplines and share our thoughts on funding, the COVID crisis and ways to engage with research as a student. We presented our work on liquid biopsy in companion dogs. This work was in part performed by a Vet Bioscience new graduate and a PhD student, and it has helped both in their research careers.

What sort of human or veterinary research collaborations are you currently looking for, that Hub members might be potentially interested in?

J & T: We are interested in the tumour immune micro-environment and how the immune system regulates tumour growth. Tomoko has a PhD student developing spectral imaging techniques in human bladder cancer as well as in other cancer types, and we are considering exploring this further in companion dogs too. Increasing our knowledge of the immune response and check-point control in cancer may help with targeted therapies such as immune check- point inhibitors. These have already had significant success in humans, but have not yet been tried in dogs.

Find Out More:

Collaborate: If you would like to find out more about Professor Morris and Dr Iwata's work, or if you think you might be interested in collaborating, please get in touch directly via the Humanimal Hub, or use our admin email address below.

Read the research: Pritchard et al, 2020. Monitoring of urothelial cancer disease status after treatment by digital droplet PCR liquid biopsy assays. Urologic Oncology: Seminars and Original Investigations. Volume 38, Issue 9, September 2020, Pages 737.e1-737.e10.
https://doi.org/10.1016/j.urolonc.2020.05.01 2.

Find out about the INSPIRE Scheme:

This scheme aims to encourage and engage veterinary, medical, and dental students in research. The scheme is coordinated by the Academy of Medical Sciences and supported by the Wellcome Trust. Find out more here.

Watch 'Picturea Scientist':

An official film selection of the postponed 2020 Tribeca Film Festival, 'Picture a Scientist' features biologist Nancy Hopkins, chemist Raychelle Burks, and geologist Jane Willenbring, and chronicles their experiences as women in STEM.
Find out more here.

Would you like a chat in the Collaboration Café?

Humanimal Hub wishes to say a huge thank you to Professor Jo Morris and Dr Tomoko Iwata for featuring in this issue of the Collaboration Café.
If you would like to have a Hub Chat with us in the Collaboration Café to tell us more about yourself, the work that you are doing and what sort of collaboration opportunities with Hub members you may be looking for, we'd love to hear from you!

Send the Hub Admin Team an email via: Hub@Humanimaltrust.org.uk and we'll be in touch to sort out the rest!

Best wishes,
The Humanimal Hub Admin Team

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