KRN Koala Infectious Disease Workshop – Summary of activities and outcomes

The KRN held a focussed workshop to discuss all aspects of infectious diseases in the koala, including, a summary of what is already known, areas where research is currently on-going and listing of research priorities for the future. The workshop ran for one whole day, Thursday 9th June 2011 and was held at QUT Kelvin Grove Campus. The list of attendees is provided below. The meeting was organised and chaired by Professor Peter Timms (QUT) and Professor Paul Young (University of Queensland).

**Agenda**

9.00 am Welcome and purpose of workshop Peter / Paul

*What do we know about disease in koalas*

9.15 am Epidemiology of chlamydial disease in SE Queensland populations (Peter Timms)

9.35 am Chlamydial disease observations at the veterinary coal face (Jon Hangar)

9.55 am Other chlamydial disease observations in the field (Bill Ellis)

10.15 am Evaluation of point-of-care Chlamydia testing of healthy and diseased koalas (Adam Polkinghorne)

10.30 am Morning tea break

10.45 am Preliminary investigations into the pathology of Chlamydia in the male koala reproductive tract (Hamdy)

11.00 am Surgical removal of unilateral bursas (Allan McKinnon)

11.15 am Vaccine development for chlamydial infection & disease (Ken Beagley)

11.35 am Update on koala retrovirus (Paul Young)

11.55 am Prevalence of koala retrovirus in wild koalas in Australia (Greg Simmons)

12.10 pm Veterinary and field observations of KoRV disease (Jon Hangar)

12.30 pm Modelling disease in koala populations (Jonathan Rhodes / Clive McAlpine)

12.50 pm Retrovirus in captive koalas; Geoff Pye (San Diego) – via Skype

1.00 pm Lunch

1.30 pm *What don’t we know about disease in koalas*

Ignoring resource implications and degree of difficulty, what areas need addressing ?

Open discussion of topics and suggestions, resulting in a list of areas needing investigation

2.30 pm *What questions can we reasonably tackle*

Given resources, skills and level of interest, what questions are good topics for investigation

3.00 pm Summary of Research Priorities and Outcomes
Workshop attendees

Peter Timms - QUT
Paul Young – University of Queensland
Greg Baxter - University of Queensland
Ken Beagley - QUT
Grant Brearley – University of Queensland
John Callaghan – Gold Coast City Council
Cathryn Dexter – Griffith University
Deidre DeVilliers - DERM
Bill Ellis - University of Queensland
Jon Hangar – Endeavour Veterinary Ecology
Hamdy - University of Queensland
Avinash Kollipara - QUT
Ros Leslie – DERM
Jo Loader – Australian Wildlife Hospital
Jo Meers - University of Queensland
Alistair Melzer - CQU
Clive McAlpine - University of Queensland
Allan McKinnon - DERM
Jeff McKee - Ecosure
Adam Polkinghorne – QUT
Jonathan Rhodes - University of Queensland
Research Priorities identified

1) The koala

- Need to understand the immunological response/capacity of the koala
  - Need to develop reagents
  - Is there any real evidence that the koala is immunologically “lazy”
- Will the marsupial genome sequences help with this
  - Is Uni Adelaide working on this?
- Are “old, fertile female koalas” protected and can we use these animals to understand what is required to protect against infectious diseases (eg Chlamydia)
- Can we co-ordinate efforts with various population studies better
  - Can we develop a standard set of animal samples that should be collected from animals wherever possible

2) KoRV

- Does KoRV induce immunosuppression in koalas
  - How can this be definitively answered
  - Need more serological reagents
- Can we develop a vaccine
  - What effect will endogenised virus have on vaccine development
- Is there a (direct) role of KoRV in the induction of cancer
- Epidemiology of KoRV needs extension. Studies planned/ongoing in Adelaide Hills
- How is KoRV transmitted (mosquitoes)
- Is KoRV a potential zoonotic threat to humans

3) Chlamydia

- What are the factors that result in “severe” disease in the koala
- Are “old, fertile female koalas” protected and can we use these animals to understand what is required to protect against infectious diseases
- What part does C. pecorum genotype play
- Does KoRV status (by whatever measure) contribute to worse disease
- How much variation is there between koalas/MHC class
- What other environmental factors are important
- Are our current/available diagnostic tests for Chlamydia robust
- What is the role of Chlamydia in male fertility
- What is the origin of Chlamydia in koalas