Hunt for superbugs in Australian animals

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University of Adelaide scientists will lead a national research effort to hunt for so-called 'superbugs' in Australian livestock and pets.

The University's School of Animal and Veterinary Sciences, based at the Roseworthy Campus, has received $110,000 in funding from Pfizer Animal Health Australia to conduct a pilot study, which is the first of its kind for the nation.

Scientists in the new Veterinary Diagnostic Laboratory at Roseworthy will research the prevalence of resistance to all major classes of antibiotic for two key groups of pathogens, Escherichia coli and staphylococci, in livestock animals and pets.

"Australia currently has no coordinated national program monitoring antibiotic resistance in livestock or companion animal pathogens," says the Director of the Veterinary Diagnostic Laboratory, Dr Darren Trott.

"Resistance in these key pathogens is a major driver throughout the world of the use of antimicrobial drugs for livestock and companion animals."

Dr Trott says Australia has some of the world's most conservative restrictions regarding the use of antimicrobial drugs in livestock. "Australian producers do not use broad-spectrum antibiotics such as fluoroquinolones or gentamicin in livestock production, and usage of the antibiotic ceftiofur is governed by strict label requirements. However, our country is increasingly importing fresh food from countries where

these antimicrobial drugs are used indiscriminately in both animals and humans.

"Australia's primary producers are under great pressure, having to compete with cheap imported products that are often of inferior quality," he says.

Dr Trott says the new study hopes to provide a clearer picture of the state of Australian livestock in particular.

"We're currently establishing a network of university-based, private and government veterinary microbiology laboratories throughout Australia that can supply us with the bacteria isolated from animal infections. These will give us a good indication of how prevalent antibiotic resistance is in our animal populations.

"We expect our study will confirm that Australia has low rates of resistance to important classes of drug in these key animal pathogens, relative to other countries, which will be good news for our exporters," he says.

"If we identify any hot pockets of emerging resistance, mitigation strategies can be implemented quickly.

"Over the next few years, we hope our data will positively influence the prescribing practices of veterinarians in the field, whether they are involved in livestock, companion animals, or both. Pfizer Australia has shown leadership in commencing the program and establishing the network. Further government research funding would be required to keep the surveillance ongoing," Dr Trott says.

Provided by University of Adelaide