A vaccine that, when administered during infancy, could render both sexes of companion animals sterile. The approach offers a nonsurgical, single-dose treatment for the permanent and safe sterilisation of male and female cats or dogs, and other key animal species.

- Non-surgical, single dose, injectable vaccine-based sterilisation treatment
- Safe and effective in both sexes of dogs, cats and other animals, providing life time protective sterilisation
- Suitable for administration in a field setting
- Reasonable manufacturing process and cost, with a viable pathway to regulatory approval

THE CHALLENGE

Many millions of companion animals (cats and dogs) are relinquished to shelters each year. Of those, up to 50% are euthanized and euthanasia is the number-one killer of all companion animals. Many ‘excess’ animals stray or roam free, becoming nuisances and causing illness and injury in the community, acting as vectors for significant zoonotic diseases such as rabies.

Due to the exponential growth rate of companion animals, sterilization is critical for the prevention of overpopulation and its associated consequences.

Estimates from the American Pet Products Association (APPA) suggest there are 83 million owned dogs and 96 million owned cats in that country and that 83% of dogs and 91% of cats are spayed or neutered. The current sterilisation method is surgical castration, which is undesirable to pet owners, and is unsuitable for field use.

THE TECHNOLOGY

A team of researchers at Monash University, The University of Melbourne and Charles Sturt University are developing a non-surgical, single dose sterilisation vaccine that is administered to neonatal animals. The vaccine will be directed to a combination of targets. The team has shown that neonatal immunisation of sheep against Target 1 causes sterilisation in around +75% of animals (Fig.1). The team has identified another target that also plays a key role in fertility. Dual targeting of both targets by similar methods, should have synergistic properties and provide 100% efficacy.

On this basis, the vaccine will be safe and effective in both sexes of dogs and cats. It will provide a life time protective sterilisation and will be suitable for administration in a field setting.

The vaccine can be produced through a scalable manufacturing process and is likely to be generated at a reasonable cost, with a viable pathway to regulatory approval in major markets such as the US.

‘Proof of Concept’ trials in neonatal dogs are in progress, with plans for a more extensive field trial in canines. The current trials aim to show that the new vaccine causes 100% sterilisation in dogs.

THE OPPORTUNITY

Through Monash University, the three collaborating organisations seek a partner to support vaccine production, testing, and regulatory development under a research and option to license or partnering arrangement.

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