

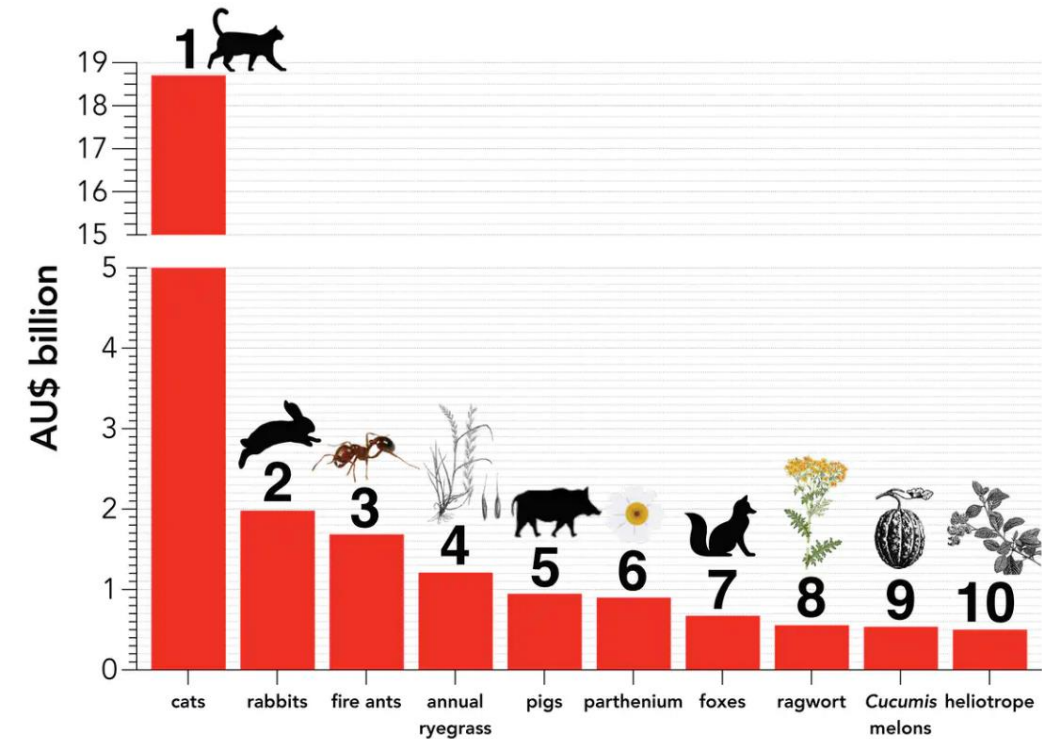
Feline Immunocontraceptives for Feral Cat Management in Australia

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Feral Cat Management Tools-Current

Spending per species since 1960s



Bradshaw, C. J. A., & Hoskins, A. (2021, July 30). Pest plants and animals cost Australia around \$ 25 billion a year – and it will get worse. *The Conversation*.

Trapping, baiting and culling the most common methods for vertebrate pest

AU\$389.59 billion spent on invasive species since 1960s

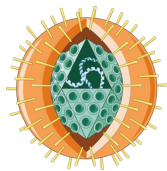
New techniques on the horizon

Viral Immunocontraceptives- overview

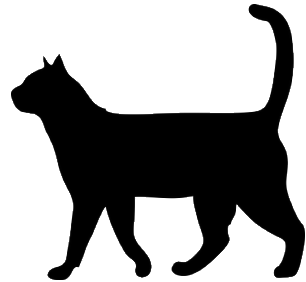
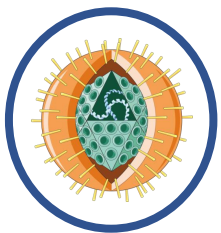
1. Reproductive target



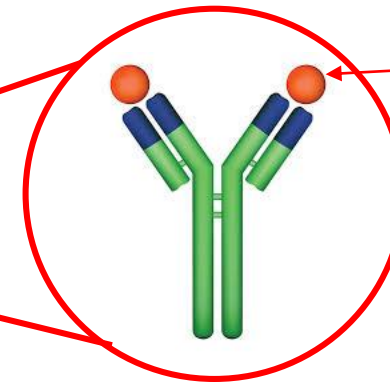
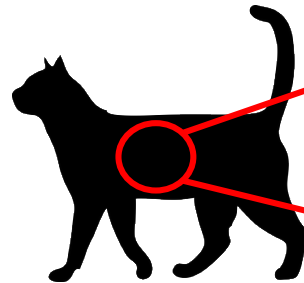
2. Clone reproductive target into virus vector



3. Virus carrying reproductive genes introduced into host

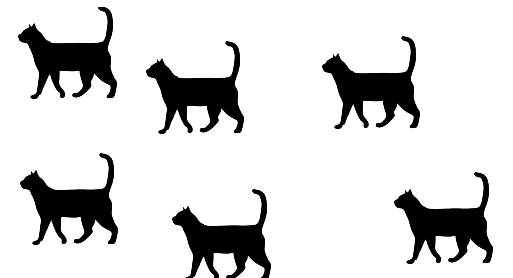
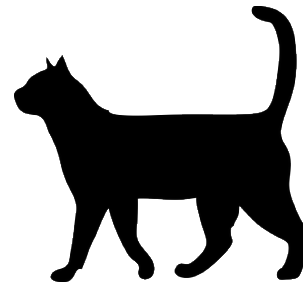


4. Induction of host immune response against virally-expressed reproductive antigens



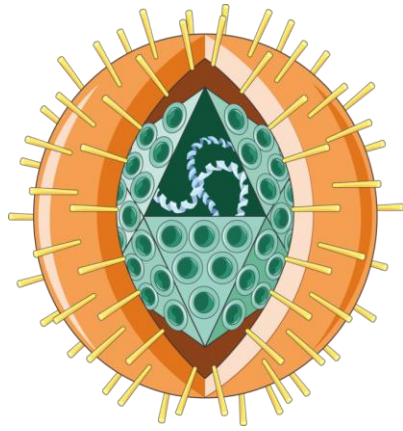
Viral Reproductive antigens

5. Results in full or partial sterility of the host



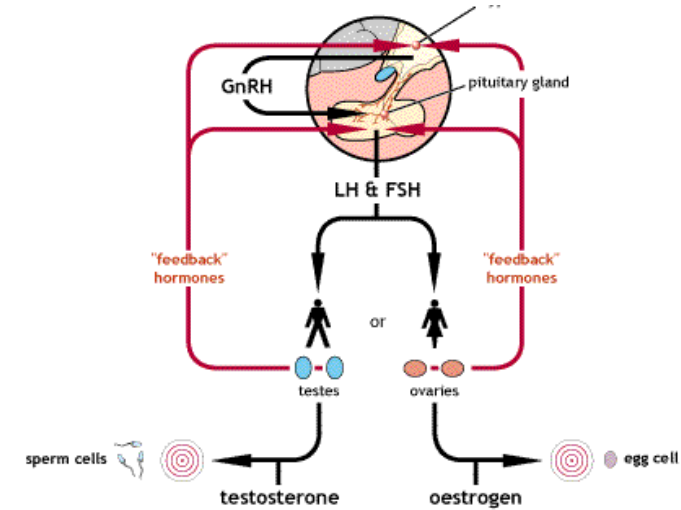
Viral vector and reproductive targets

Feline alphaherpesvirus-1 (FHV-1)

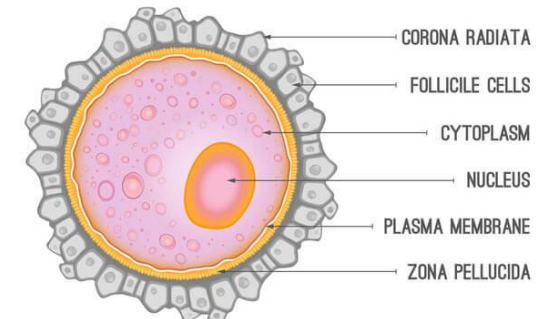


- **Double stranded** DNA virus, 135 kb in length
- Achieves **latency**
- Infects **respiratory** epithelial cells
- Vaccination in cats is **common**
- Has been studied experimentally as a vector for feline pathogens

Gonadotropin releasing hormone (GnRH)

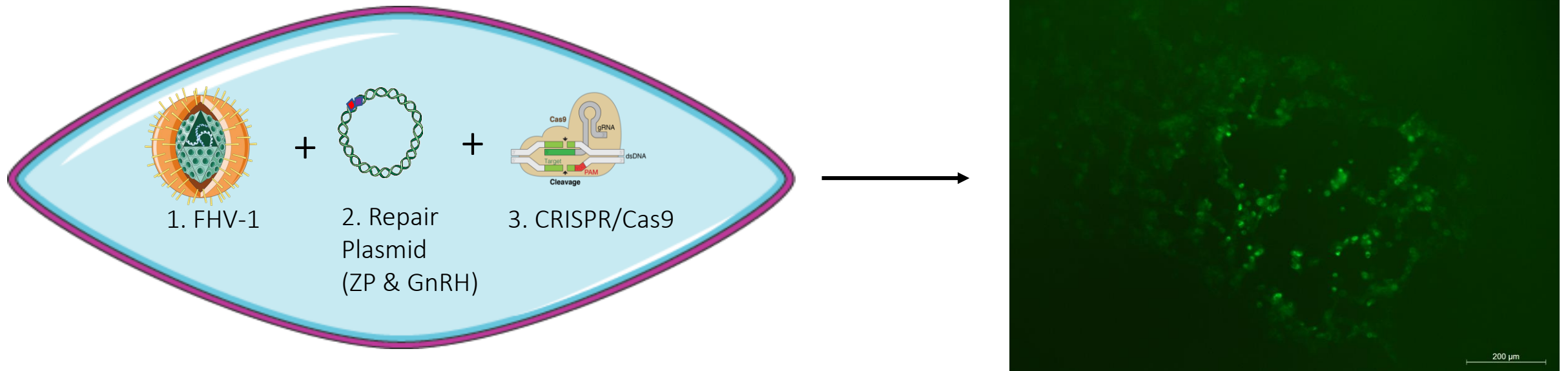


Zona Pellucida (ZP)



Transfection/infection with CRISPR/Cas9

Feline cell



- Immunocontraceptive candidate **FHV-A**
- Contains **reproductive genes** GnRH and ZP
- No changes to other FHV-1 genes

Acknowledgements



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