



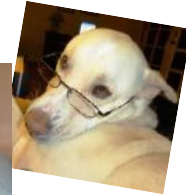
Immunocontraception

Where we started and where we are headed...

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Thanks



History

- Faulkner LC, Pineda MH, Reimers TJ, Immunization against gonadotropins in dogs, in Immunization With Hormones in Reproduction Research, pp. 199-214, 1975. (38 years)
 - Dog GnRH vaccine approved by USDA for treatment of BPH
 - Deer, wild horse vaccine approved by EPA (GonaCon)
- Mahi-Brown CA, Huang TTF Jr., Yamagimachi R, Infertility in bitches induced by active immunization with porcine zonae pellucidae. J Exp Zool 222: 89-95, 1982. (31 yrs)
 - No dog or cat vaccine approved
 - Horse PZP vaccine approved by the EPA

Barriers

- Duration of immunity-boosters required
- Never 100% effective
- Safety (injection site)
- Regulatory hurdles
- Technical difficulties
- Product development costs



GnRH Vaccine

Pfizer Animal Health (Zoetis)

- “Canine GnRH immunotherapeutic for treatment of benign prostatic hypertrophy in male dogs”
 - Two doses 4-6 wks apart; repeat every 6 months
 - No longer on the market
- **Improvac®**
 - Approved for cattle (behavior) and pigs (boar taint)
 - Effective for male elephants to suppress musth



Current Immunocontraceptives

- GnRH vaccines
 - Effective in males, females (deer, wild horses, cattle, pigs)
- Zona pellucida vaccine
 - Effective in females (horses)
 - Species differences (porcine doesn't work in cats)



Where are we now?



- Exploring a GnRH vaccine based on GonaCon (different formulation) for applications in dogs (Dr. Lecuona)
- “Bleeding edge” research on methods to achieve single treatment very long term immunity (Drs. Munk and Samoylova)



The future for immunocontraception for dogs and cats?

- Single injection very long term (>5 years to permanent) suppression of fertility for males and females
- When and at what cost? (The LR estimate*)
 - Five years of research - \$10M
 - Five years of development - \$15M



*optimistic