

STRATEGIES OF IMMUNOCASTRATION IN MAMMALS

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Immunocastration is an immunological strategy used to block the activity of gonadotropin-releasing hormone (GnRH-I), thus allowing control of reproductive activity, fertility, physiological characteristics and sexual behavior in mammals. This process provides a more humanitarian alternative to classical methods of controlling sexual behavior in production animals such as surgical castration in male pigs and bulls, and can also be applied to pets or wild animals. However, the duration of the immune-contraction effect is limiting, which is a problem when long-term reproductive and population control are wanted. There are existing vaccine strategies that vary both in the design of the antigen and use of different adjuvants, which have proven to be effective in controlling reproductive activity for short or prolonged periods of time in different animal models. Using an immunocastration model based on a recombinant antigen, our laboratory has managed to induce a temporary blockage of GnRH-I, decreasing the production of sex hormones and blocking fertility, oogenesis and spermatogenesis, thus reducing sexual behavior in both male and female of different animal species. We found the duration and potency of the immunocastration effect is strongly linked to the adjuvant strategy used with correlations to fertility, gonadal function and hypothalamic GnRH-I expression in immunocastrated animals, making it a vital component for reproductive control and vaccine design.



Biography

Leonardo Sáenz Iturriaga is a Veterinary Doctor in Biomedical Sciences of the University of Chile. He is an Associate Professor of the Faculty of Veterinary and Animal Sciences of the University of Chile; Director of the Veterinary Vaccines Laboratory, an University Center. He is specialized in research and development of vaccines and adjuvants of new generation with the ultimate goal of transferring technologies to the veterinary industry. He has multiple articles and patents on recombinant and subunit veterinary vaccines.

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