Non-surgical sterilisation iSpay
Will pet-spaying operations soon be a thing of the past?

*Dr CheMyong Jay Ko is the founder of Epivara and a professor in the College of Veterinary Medicine at the University of Illinois Urbana-Champaign, USA, working on reproductive endocrinology. His team has recently achieved a breakthrough in the search for a non-surgical method of permanently sterilising female companion animals such as dogs and cats. Here, we present their proof-of-concept study showing that a single dose of estrogen delivered at the prepubertal stage of life via a slow-release formulation prevents the development of reproductive organs. This novel technology, named iSpay, opens up a possibility for a practical alternative to many millions of spaying operations currently used to prevent unwanted pet pregnancies.*

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Behind the Research

Dr CheMyong Jay Ko

Research Objectives

Dr CheMyong Jay Ko and his team developed Spay, a non-surgical method for the permanent sterilisation of female mammals.

Detail

Bio

Dr CheMyong Jay Ko is a professor in the College of Veterinary Medicine at the University of Illinois Urbana-Champaign. His primary research focuses on reproductive endocrinology. He received a PhD degree from Seoul National University and postdoctoral training from the University of Kentucky. Before moving to Illinois in 2011, he worked as a professor in the Medical Center of the University of Kentucky for 10 years. In 2016, Dr Ko founded Epivara at the University of Illinois’ Research Park.

Funding

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Collaborators

The researchers are grateful to Dr Ozawa (Nippon Medical School, Tokyo, Japan) for providing the anti-kisspeptin polyclonal antibody (RR9D, AB_2910199). They also thank Dr C J Wright, Dr C J Fields, Dr J Dimievich, and Dr M Tseng for their assistance in performing single-cell RNA sequencing and analysing data.

References

- Park, CJ, et al, (2023) Single neonatal estrogen implant sterilizes female animals by decreasing hypothalamic KISS1 expression. Scientific Reports, 13, 9627. doi.org/10.1038/s41598-023-36727-6

Personal Response

What inspired you to conduct this study?

My work at the university includes not only teaching veterinary students but also counselling them on their vision and challenges. I have found that many students dream of becoming veterinarians to help and treat sick or suffering animals, but in reality, many veterinarians spend their careers performing spay and neuter surgeries. My vision primarily focuses on enabling the students I teach to lead more meaningful lives as veterinarians, and I take great joy and a sense of purpose in the belief that such work can also make people and animals happier.

Do you think there may be applications for this new technique in nature conservation, perhaps in the control of invasive mammals?

The current developed technology does not work in animals beyond achieving sexual maturity. Therefore, there are many limitations to its use in controlling the population of wild animals. However, this technology can be used for animal species where easy and efficient access to newly born individuals is possible.

When will your first product become available on the market?

Our Spay technology is protected by patents in the USA and EU countries. The team is seeking FDA approval of their first product, which may take approximately 3–5 years. Immediately after receiving the FDA approval, the product will become available on the market.