Our research focus is the development of anti-fertility vaccines composed of whole phage particles carrying peptides with contraceptive properties for use in feral animals. The vaccines are designed to trigger antibody production against gonadotropin releasing hormone (GnRH). The antibodies inactivate GnRH, causing reduced release of gonadotropin hormones and gonadal atrophy. Phage-GnRH vaccines with potential contraceptive properties were generated via selection from a phage display library using cat and dog GnRH antibodies as selection targets, allowing identification of phages displaying GnRH-like peptides. When tested in mice, these constructs induced the production of antibodies against GnRH and suppressed serum testosterone.

The goal of this study is to evaluate the potential of these vaccines in cats. Sexually mature male cats were characterized as to their reproductive parameters and injected with a phage-GnRH vaccine according to the following treatment groups: single phage-GnRH vaccine with adjuvant (group 1, n=5), a phage-GnRH vaccine without adjuvant and a half-dose booster one month later (group 2, n=5), or a phage-GnRH vaccine with adjuvant and a half-dose booster with adjuvant three months later (group 3, n=5, in progress).

Anti-GnRH antibodies and testosterone in serum, testicular volume by dose booster with adjuvant three months later (group 3, n=5, in progress).

Following treatment groups: single phage-GnRH vaccine with adjuvant (group 1), atropyl phage-GnRH constructs with potential contraceptive properties were selected from an existing type 8 phage display library using GnRH antibodies as selection targets.


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