FIP (Feline Infectious Peritonitis) mRNA Vaccine

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ABSTRACT

Researchers at the University of California, Davis have developed an approach to combat Feline Infectious Peritonitis (FIP) through an in vitro-transcribed (IVT) RNA vaccine targeting the FCoV nucleocapsid (N) protein antigen.

FULL DESCRIPTION

This technology introduces a novel vaccine strategy against FIP, a fatal disease in cats caused by feline coronavirus (FCoV). Utilizing in vitro-transcribed (IVT) RNA molecules that encode the FCoV nucleocapsid (N) protein antigen, this vaccine aims to provide a protective immune response in cats, potentially overcoming the challenges faced by previous vaccine attempts.

APPLICATIONS

- Veterinary vaccines for domestic cats, particularly those in high-density environments like shelters and catteries.
- Research tools in virology and immunology for studying FCoV and related coronaviruses.
- Potential platform for developing similar vaccines against other coronaviruses in animals and humans.

FEATURES/BENEFITS

- Targets FCoV N protein antigen with high amino acid sequence identity for broader protection.
- Utilizes increased G/C content for enhanced expression.
- Incorporates advanced LNP formulation for efficient delivery and immune response.
- Designed to avoid antibody-dependent enhancement (ADE), increasing safety.
- Addresses a critical need in veterinary medicine with no effective FIP vaccine currently available.
- Addresses high mutation rate of FCoV leading to vaccine evasion.

PATENT STATUS

Patent Pending

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OTHER INFORMATION

KEYWORDS

feline coronavirus, FIP, IVT RNA, LNP formulation, nucleocapsid protein, codon optimization, G/C content, veterinary medicine, immunogenicity

CATEGORIZED AS

- **Agriculture & Animal Science**
  - Animal Science
- **Veterinary**
  - Companion Animal
  - Vaccines

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