

FIP (Feline Infectious Peritonitis) mRNA Vaccine

Tech ID: 34016 / UC Case 2023-550-0

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

Country	Type	Number	Dated	Case
Patent Cooperation Treaty	Published Application	2025/217575	10/16/2025	2023-550

Additional 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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University of California, Davis

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