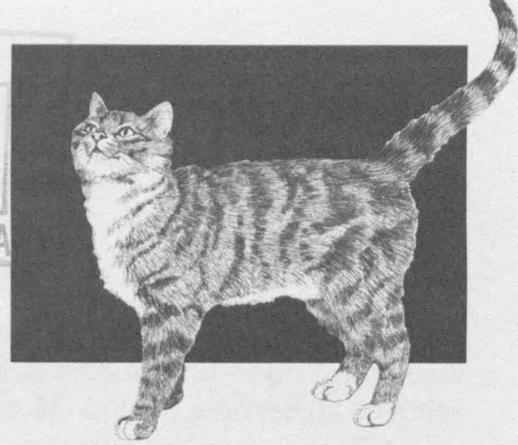


# Perspectives On Cats

A Newsletter for Cat Fanciers  
From The Cornell Feline Health Center



Fall 1992

## Evaluation of the Safety and Efficacy of Primucell-FIP Vaccine

F. W. Scott, D.V.M., Ph.D., W. V. Corapi, D.V.M., Ph.D., and C. W. Olsen, D.V.M., Ph.D.

An intranasal feline infectious peritonitis vaccine, Primucell-FIP<sup>®</sup>, was licensed and marketed within the United States in early 1991 by SmithKline Beecham Animal Health (SBAH, formerly Norden Laboratories). This vaccine is an attenuated temperature-sensitive mutant—that is, the virus has been altered such that its replication is partially restricted at 39° C but not restricted at 31° C.

Three experiments were conducted in specific-pathogen-free kittens to evaluate the safety and efficacy of this vaccine in a controlled laboratory setting. The studies were funded by The Robert H. Winn Foundation, SmithKline Beecham Animal

Health and contributions to the Cornell Feline Health Center. The results of these three studies were presented at the Fourth Annual Feline Practitioners Seminar at Cornell University on August 7-10, 1992. The following is a summary of the results as presented by the senior author.

The safety of Primucell-FIP<sup>®</sup> has been monitored by SBAH through a field safety trial and by practitioner complaints. Post-vaccination complaints to SBAH and to the Cornell Feline Health Center have been minimal to date. Serious post-vaccination clinical signs of illness were not observed in the kittens comprising the three studies at Cornell University.

All vaccinated cats in the three studies developed positive virus-neutralizing-antibody titers following vaccination. All but one of these vaccinated cats also had enhancing antibodies present in their sera following vaccination, as measured by in vitro assays for antibody-dependent enhancement (ADE) of feline infectious peritonitis virus (FIPV). ADE occurs when antibody helps the virus infect the macrophages (white blood cells that engulf and destroy infectious agents). The macrophage then becomes a carrier for the virus rather than destroying the virus.

The efficacy of Primucell-FIP<sup>®</sup> was evaluated against various doses of exposure virus, various routes of exposure, and two strains of virus. In summary, with the challenge systems used in these studies, protection was only observed in a portion of

### Inside this issue ...

<i>Evaluation of the Safety and Efficacy of Primucell-FIP</i>	page 1
<i>Fear of New Distemper Disease is Dispelled</i>	page 3
<i>Cat Breeder's Seminar is a Success</i>	page 4
<i>Honor Roll</i>	page 6
<i>Purr-fect Gifts</i>	page 7
<i>Plan Your Giving and Save</i>	page 8

the vaccinated cats exposed to the lower dose of virus (either FIPV-1146 or FIPV-DF2 virus strains). With the higher dose FIPV-1146 exposure method using either aerosol or intranasal exposure, protection was not observed. Enhancement of infection occurred in several cases, especially with intranasal exposure. This was presumably due to a greater degree of exposure to virus via the intranasal route. The amount of FIP virus to which cats are exposed during natural infection in the field is unknown at this time. Studies in our laboratory have shown that ADE of infectivity of macrophages in vitro is a dose-related phenomenon between virus and enhancing antibodies. It appears that this same dose-related phenomenon exists with FIPV infection in vivo.

Based on the limited efficacy and the potential to stimulate immune enhancement under certain conditions, the routine use of Primucell-FIP® in low-

risk populations of cats cannot be recommended. In high-risk populations such as breeding catteries and open multicat facilities, the veterinarian must assess the risk of FIP without vaccination compared to the risk and benefits with vaccination. The veterinarian, in discussion with the owner, then should decide whether or not to establish a vaccination program in this population. ■

*Dr. Fred W. Scott is professor of virology at the College of Veterinary Medicine and is the director of the Cornell Feline Health Center. Dr. Wayne Corapi, former research associate of the Cornell Feline Health Center, worked on FIP vaccine development. Dr. Christopher Olsen received his Ph.D. degree in June 1992 for his work on feline infectious peritonitis.*



We did not receive any reader's questions during the last three months for this regular feature column. If you would like to see this column continue, please send your question to ...

**Cornell Feline Health Center  
POC/Mail Bag  
College of Veterinary Medicine  
Ithaca, NY 14853-6401**

## Perspectives On Cats

*A Newsletter for Cat Fanciers  
From The Cornell Feline Health Center*

The ultimate purpose of the Cornell Feline Health Center is to improve the health of cats everywhere, by developing methods to prevent or cure feline diseases, and by providing continuing education to veterinarians and cat owners. All contributions are tax-deductible.

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Editor: June E. Tuttle  
Secretaries: Sheryl A. Thomas, Gwen Frost,  
Julie Elzer*

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## *Fear of New Distemper Disease is Dispelled*

James R. Richards, D.V.M.

The Cornell Feline Health Center has recently received reports of feline panleukopenia (FPV) infection—feline distemper—occurring in a few catteries, resulting in several kittens dying. Currently we have no reason to suspect that these infections are being caused by a new or unusual strain of FPV, or that the vaccines are failing to induce adequate protection. All reported cases have involved young kittens, 8 to 13 weeks old, that were exposed to either a recovered FPV-shedding cat, an infected cat showing no clinical signs, or to virus-contaminated objects.

*A properly vaccinated cat is immune to FPV, but kittens are particularly prone to infection due to an interaction between maternal antibody, the vaccination, and the kitten's own immune system.* Kittens receive protective antibodies in the colostrum ingested from the queen's milk during the first hours of life. This maternal antibody helps to protect kittens against infection during the time when their own immune systems are immature, but it also interferes with a vaccine's ability to induce an immune response. Therefore, kittens are vaccinated at 6 to 8 weeks of age and again at three to four week intervals until maternal antibodies decline to a level that allows the vaccine to sufficiently stimulate the kitten's own immune system. Giving the last vaccination in the series at 12 weeks of age is usually adequate. In cases where the queen's antibody level is quite high (i.e. a queen that has recovered from FPV) vaccines should continue until the kitten is 16 weeks of age. Even with these efforts, the opportunity exists for the virus to cause infection during the kitten's first weeks of life when maternal antibody may be too

low to prevent infection but too high to allow immunization by vaccination. Exposure to the virus during this time can easily result in infection.

Massive quantities of FPV are shed from an infected cat and can persist in the environment for more than a year. Therefore, prevention of infection and subsequent spread of disease in a cattery is best accomplished by following these recommendations—

- ✓ Vaccinate adult cats annually and appropriately vaccinate kittens.
- ✓ Isolate all sick cats from the rest of the cattery.
- ✓ Quarantine all incoming cats.
- ✓ Separate susceptible kittens from potentially shedding cats and prevent them from coming in contact with virus-contaminated objects.
- ✓ Properly disinfect the environment. A solution of four ounces of household chlorine bleach in one gallon of water is relatively inexpensive and very effective.

Accurate diagnosis is essential because many other diseases can cause signs similar to those caused by FPV. Working closely with your veterinarian is necessary to successfully manage any disease problem in a cattery or a multicat household. ■

*Dr. James R. Richards is assistant director of the Cornell Feline Health Center and director of the Dr. Louis J. Camuti Memorial Feline Consultation and Diagnostic Service. This service is available from 9 am-12 pm and 2-4 pm weekdays by calling 1-800-KITTY DR. A service fee of \$25 may be charged which is payable by credit card.*

## *Cat Breeders' Seminar Is a Success*

Cervical line lesions, genograms, antioxidants, pathogenesis and virulence were a few of the buzzwords that 169 cat breeders and fanciers heard during the Comprehensive Seminar for Cat Breeders on August 15-16 in Ithaca, New York. Participants came from across the United States and Canada to Cornell University to learn about cat nutrition, cattery management of infectious diseases, genetic defects, breeder-veterinarian relations, breeder ethics and oral/dental diseases.

Dr. James R. Richards, assistant director of the Cornell Feline Health Center and director of the Dr. Louis J. Camuti Memorial Feline Consultation and Diagnostic Service, began the first day's session by discussing the different factors—host, agent and environment—that influence the development of infectious diseases and how they can be controlled to maximize the health of a cattery. He explained the value of



*Dr. Arleigh Reynolds (right) presents a lecture on cat nutrition during the Comprehensive Seminar for Cat Breeders at Cornell University.*

establishing isolation areas within a cattery and maintaining complete and accurate health records for each animal. On the second day of the seminar Dr. Richards addressed the management of ringworm, coronaviruses, and upper respiratory tract infections in catteries.

Basic nutrition concepts and how they relate to the various physiologic states of the cat (i.e. gestation and lactation, growth, maintenance and aging) were presented by Dr. Arleigh Reynolds, research associate in veterinary physiology. He ended his presentation with a discussion of how diet affects the feline urologic syndrome and feeding strategies to minimize the risk of this complex disease. His final presentation, "Facts, Fads and Fallacies in Feline Nutrition," dispelled several nutrition myths such as *cats need milk; cats crave fish; brewer's yeast prevents flea infestation; low ash cat foods will help prevent FUS; cats need excessive amounts of protein; all-natural foods are better than commercial foods; and most cats will*



*During a coffee break, Dr. James Richards (left) meets with a group of cat breeders.*

*benefit from dietary vitamin or mineral supplementation.*

The need for feline karyotyping was stressed by Dr. John E. Saidla, director of veterinary continuing education, during his presentation on feline genetics. He recommended that breeders should do genograms to assist in tracking possible genetic defects within a "family." Currently only 70 genetic defects have been identified in cats as compared to 3,000 in humans and 200 in dogs. Dr. Saidla illustrated his lecture with graphic slides of genetic defects including craniofacial anomalies in Burmese cats, cleft palate and hydrocephalic cats.

A lively discussion on breeder-veterinarian relations resulted from Dr. Betsy Arnold's presentation on the topic. Dr. Arnold owns a feline-exclusive practice in Rochester, New York and breeds Siamese cats. Concerns raised by the breeders included the unwillingness of many veterinarians to make "house calls" for large catteries and the lack of feline reproduction knowledge by some veterinarians. The following day Dr. Arnold presented a talk on breeder ethics which sparked several stories from breeders about state and federal laws in effect, or being considered, to regulate cat breeding.

The after-dinner presentation on Saturday night was given by Dr. John W. Hermanson, assistant professor in veterinary anatomy. He provided insight into the ancestry of the cat.

The final lecture was on feline oral and dental diseases. Dr. Saidla began his presentation by stating, "The mouth is the mirror of the body." He supported the statement by discussing cervical line lesions, gingivitis and anatomical defects of the mouth.

Certificates of course completion were awarded at the close of the seminar to the participants. The participants also went home with a notebook of the speakers' notes to have for future reference. One cat breeder aptly summarized the weekend by giving it a four-star rating. Plans are being made to follow up on this successful program for 1993. The seminar was co-sponsored by the Cornell Feline Health Center, the Cornell University Office of Veterinary Continuing Education, and Cornell University's School of Continuing Education and Summer Session. ■



*A participant models the new Cornell Feline Health Center's t-shirt which she purchased during the seminar. (See page 7 to order a t-shirt. Several sizes and colors are available.)*

## Honor Roll

We gratefully acknowledge the following people and cat clubs who contributed \$100 or more to support the programs of the Center during the last three months. We also wish to thank those who are not listed, but made a contribution during this time. Your contributions are a very important part of our support, equaling 11 percent of our total income used for educational programs and feline health studies.

### Individual(s)

Judith Albert, Virginia  
Nina Beach, New York  
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Joan Frawley, New York  
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In memory of *Delius*  
In honor of Dr. Kathy Bissell  
In memory of *Tiger*  
General Donation  
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In memory of *Annie*  
General Donation  
In memory of *Simon*  
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In memory of *Lucifer*  
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Feline Infectious Peritonitis research—In memory of *Puffer*  
In memory of *Lucy*  
In memory of *Mimi*  
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In memory of *Howard* and in honor of Dr. Scott Luckow

### Patron Member(s)

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North Coast Cat Fanciers, Ohio  
North Coast Cat Fanciers, Ohio (In memory of Juanita Prybyl)  
Potomac Area Cat Enthusiasts, Virginia

## Purr-fect Gifts

### Tee-shirts (\$14 includes shipping charges)

These shirts are a 50/50 blend of polyester and cotton. The shirt has an attractive design of a cat and kitten with the Center's logo (see photograph on page 5). Colors: pink, light blue, light green, grey, and white. Sizes (adult only): small, medium, large, X-large and XX-large.

### The Cornell Book of Cats (\$30 includes shipping charges)

This comprehensive reference on cat health care is a must for every cat owner's library. By ordering directly from the Center you will receive an autographed copy by the director, Dr. Fred Scott.

### Gift Memberships (\$12)

Order gift memberships for your friends and receive a 20% discount off the price of a regular membership. Your friends will also receive a special letter acknowledging your thoughtful gift. Excellent gift for birthdays, anniversaries, and other special occasions.

### Honor Certificates (\$25)

If you're looking for a special way to say "thank you" to your veterinarian, consider a special personalized 8x10 parchment certificate. Your veterinarian will also receive a personalized letter with the certificate.

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## Order Form

Send this completed form and your remittance to: *Orders, Cornell Feline Health Center, 618 VRT, Ithaca, NY 14853-6401. Allow 4 to 6 weeks for delivery.*

ITEM DESCRIPTION	SIZE	COLOR	QUANTITY	PRICE
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**\*For gift memberships and honor certificates please provide names and addresses below:**

Send to: \_\_\_\_\_

Send to: \_\_\_\_\_

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## *Plan Your Giving and Save*

There are only a few months left before the year's end. Now is a good time to review your 1992 contributions to various organizations. The following gifts can provide tax advantages for you, and assist the Cornell Feline Health Center in sustaining and expanding its feline health programs—

**Cash Gift**—The actual out-of-pocket cost of a cash gift is less than the dollar amount of the gift because of the income-tax charitable deduction.

**Appreciated Property**—A gift of long-term appreciated property, i.e. stock, can result in substantially greater tax benefits because the tax on the unrealized appreciation is avoided.

**Bequests**—An estate-tax charitable deduction is allowed for the full value of the gift.

**Life Insurance**—Depending on the arrangement of your gift, life insurance can create a number of favorable tax consequences.

**Life Income Agreement**—This is a general term that includes gift annuities, pooled life income funds,

and charitable remainder trusts. They allow you to make a substantial gift through an irrevocable trust and still receive income from the assets. Anyone 50 years or older may take advantage of a life income agreement. It provides income for life for you and/or a second beneficiary you name. After the beneficiaries are no longer living, the funds are put to use at Cornell for the purpose you specified.

*Additional information is available by contacting Thomas S. Foulkes, Director of Planned Giving, 55 Brown Rd., Ithaca, NY 14850; phone (607) 254-6174.*

### *Hospice Care for Cats*

In response to many calls we have received, we are developing a list of people throughout the United States who adopt or care for terminally ill cats—especially cats diagnosed with feline leukemia or feline immunodeficiency virus. If you, or someone you know, is involved in "hospice care for cats" please send us your name, address and phone number. We appreciate your help!



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