Date of Approval: September 4, 2009

FREEDOM OF INFORMATION SUMMARY

SUPPLEMENTAL NEW ANIMAL DRUG APPLICATION

NADA 141-265

NUFLOR GOLD

Florfenicol (in 2-pyrrolidone and triacetin)
Injectable Solution
Beef and Non-Lactating Dairy Cattle

To add *Mycoplasma bovis* to the list of target pathogens for the bovine respiratory disease treatment indication.

Sponsored by:

Intervet, Inc.

TABLE OF CONTENTS

I. GENERAL INFORMATION:

A. File Number:	NADA 141-265
B. Sponsor:	Intervet, Inc. 56 Livingston Avenue Roseland, NJ 07068 Drug Labeler Code: 000061
C. Proprietary Name(s):	NUFLOR GOLD
D. Established Name(s):	Florfenicol (in 2-pyrrolidone and triacetin)
E. Pharmacological Category:	Antimicrobial
F. Dosage Form(s):	Sterile injectable solution
G. Amount of Active Ingredient(s):	300 mg florfenicol/mL
H. How Supplied:	100, 250, and 500 mL glass vials
I. How Dispensed:	Rx
J. Dosage(s):	40 mg florfenicol/kg body weight (BW) administered once
K. Route(s) of Administration:	Subcutaneous in the neck
L. Species/Class(es):	Cattle/Beef and non-lactating dairy
M. Indication(s):	NUFLOR GOLD is indicated for treatment of bovine respiratory disease (BRD) associated with *Mannheimia haemolytica*, *Pasteurella multocida*, *Histophilus somni*, and *Mycoplasma bovis* in beef and non-lactating dairy cattle.
N. Effect(s) of Supplement:	This supplement provides for the addition of *Mycoplasma bovis* to the list of target pathogens for the BRD treatment indication.

II. EFFECTIVENESS:

A. Dosage Characterization:

This supplemental approval does not change the previously approved dosage. The Freedom of Information (FOI) Summary for the original approval of NADA 141-265 dated March 21, 2008, contains dosage characterization information for cattle.

B. Substantial Evidence:

Effectiveness of florfenicol (in 2-pyrrolidone and triacetin) for the treatment of bovine respiratory disease (BRD) associated with *Mannheimia haemolytica, Pasteurella multocida,* and *Histophilus somni* in beef and non-lactating dairy cattle was previously demonstrated in the original approval, and is summarized in the FOI Summary for NUFLOR GOLD (NADA 141-265) dated March 21, 2008.

Effectiveness of florfenicol (in 2-pyrrolidone and triacetin) for the treatment of BRD associated with *Mycoplasma bovis* was demonstrated by identifying *M. bovis* isolates and by examining treatment success data from cattle in the BRD treatment study (Study No. C05-126-00) conducted for the original approval of NUFLOR GOLD (NADA 141-265).

The treatment success rate of calves with *M. bovis* isolated during the BRD treatment study (Study No. C05-126-00) described in the FOI Summary for the original approval of NADA 141-265 dated March 21, 2008, was evaluated. *M. bovis* isolates were obtained from pre-treatment nasal swabs from all calves enrolled at all four sites, post-treatment nasal swabs from treatment failures in the NUFLOR GOLD and saline control treatment groups at three sites, and lung tissue from one calf that died in the saline control treatment group. *M. bovis* isolates were identified to the species level using a polymerase chain reaction (PCR) method.

Fifty-nine *M. bovis* isolates were obtained from 54 calves. There were numerically more treatment successes than treatment failures in NUFLOR GOLD treated calves that cultured positive for *M. bovis* pre-treatment. In the NUFLOR GOLD treatment group, seven calves cultured positive for *M. bovis* pre-treatment. Four of the seven calves (57%) were treatment successes, and three calves (43%) were treatment failures.

These results from Study Number C05-126-00, along with the results previously summarized in the FOI Summary dated March 21, 2008, demonstrate that NUFLOR GOLD, when administered as a single SC dosage of 40 mg florfenicol/kg BW, is effective for the treatment of BRD associated with *M. bovis* in beef and non-lactating dairy cattle.

III. TARGET ANIMAL SAFETY:

CVM did not require target animal safety studies for this supplemental approval. The FOI Summary for the original approval of NADA 141-265 dated March 21, 2008, contains a summary of target animal safety studies for cattle.

IV. HUMAN FOOD SAFETY:

A. Toxicology:

CVM did not require toxicology studies for this supplemental approval. The FOI Summaries for the original approval of NADA 141-063 dated May 31, 1996, and the original approval of NADA 141-265 dated March 21, 2008, contain a summary of all toxicology studies.

B. Residue Chemistry:

CVM did not require residue chemistry studies for this supplemental approval. The FOI Summaries for the original approval of NADA 141-063 dated May 31, 1996, and the original approval of NADA 141-265 dated March 21, 2008, contain a summary of residue chemistry studies for cattle.

C. Microbial Food Safety:

The impact of the proposed change in indication for NUFLOR GOLD to include a new pathogen, *M. bovis*, for the treatment of BRD in beef and non-lactating dairy cattle was carefully considered by the Agency. The Agency determined that because there are no changes in formulation, dosage, route of administration, or duration of use in this supplement, and the only change is the addition of an organism to an approved indication, the addition of this organism to the previously approved treatment indication should not significantly impact public health, and, therefore, further evaluation of microbial food safety was not necessary at this time.

D. Analytical Method for Residues:

The FOI Summary for the original approval of NADA 141-063 dated May 31, 1996, contains the analytical method summaries for florfenicol in cattle.

The validated regulatory method for detection and confirmation of residues of florfenicol is available from CVM, FDA, 7500 Standish Place, Rockville, MD 20855.

V. USER SAFETY:

The product labeling contains the following information regarding safety to humans handling, administering, or exposed to NUFLOR GOLD

WARNINGS: NOT FOR HUMAN USE. KEEP OUT OF REACH OF CHILDREN. This product contains materials that can be irritating to skin and eyes. Avoid direct contact with skin, eyes, and clothing. In case of accidental eye exposure, flush with water for 15 minutes. In case of accidental skin exposure, wash with soap and water. Remove contaminated clothing. Consult a physician if irritation persists. Accidental injection of this product may cause local irritation. Consult a physician immediately. The Material Safety Data Sheet (MSDS) contains more detailed occupational safety information.

For customer service, to report suspected adverse reactions, or to obtain a copy of the MSDS, call 1-800-211-3573.

VI. AGENCY CONCLUSIONS:

The data submitted in support of this NADA satisfy the requirements of section 512 of the Federal Food, Drug, and Cosmetic Act and 21 CFR part 514. The data demonstrate that NUFLOR GOLD, when used according to the label, is safe and effective for the treatment of BRD associated with *M. bovis* in beef and non-lactating dairy cattle. Additionally, data demonstrate that residues in food products derived from cattle treated with NUFLOR GOLD will not represent a public health concern when the product is used according to the label.

A. Marketing Status:

Labeling restricts this drug to use by or on order of a licensed veterinarian. This decision was based on the following factors: (1) adequate directions cannot be written to enable lay persons to appropriately diagnose and subsequently use this product to treat BRD; and (2) restricting this drug to use by or on order of a licensed veterinarian should help prevent indiscriminate use which could result in violative tissue residues.

B. Exclusivity:

Under Section 512(c)(2)(F)(iii) of the Federal Food, Drug, and Cosmetic Act, this approval qualifies for THREE years of marketing exclusivity beginning on the date of the approval. The three years of marketing exclusivity applies only to the treatment of BRD associated with *Mycoplasma bovis* in beef and non-lactating dairy cattle indication for which this supplement is approved.

C. Supplemental Applications:

This supplemental NADA did not require a reevaluation of the safety or effectiveness data in the original NADA (21 CFR 514.106(b)(2)).

D. Patent Information:

The sponsor did not submit any patent information with this application.

For current information on patents, see the Animal Drugs @ FDA database (formerly the Green Book) on the FDA CVM internet website.

VII. ATTACHMENTS:

Facsimile Labeling:

A. 100 mL bottle
B. 100 mL carton
C. 100 mL vial Product Information insert
D. 250 mL vial with attached, pull-out Product Information insert
E. 500 mL vial with attached, pull-out Product Information insert