Date of Approval: Dec 27, 2000

FREEDOM OF INFORMATION SUMMARY

ORIGINAL NEW ANIMAL DRUG APPLICATION

ANADA 200-228

Phoenectin™ Injection for Cattle and Swine (1% ivermectin)

For the treatment and control of gastrointestinal nematodes, lungworms, grubs, lice, and mites in cattle. For the treatment and control of gastrointestinal roundworms, lungworms, lice, and mites in swine. For the treatment and control of grubs in American bison. For the treatment and control of warbles in reindeer. See INDICATIONS section for complete information on the specific parasites controlled in each species.

Sponsored by:

Phoenix Scientific, Inc.
3915 S. 48th Street Terrace
P.O. Box 6457
St. Joseph, MO 64506-0457

FREEDOM OF INFORMATION SUMMARY

1. GENERAL INFORMATION:

ANADA:	200-228
Sponsor:	Phoenix Scientific, Inc. 3915 South 48th Street Terrace P.O. Box 6457 St. Joseph, MO 64506-0457
Generic Name:	Ivermectin Injectable Solution
Trade Name:	Phoenectin™ Injection for Cattle and Swine
Dosage Form:	Injectable Solution
How Supplied:	50 mL, 200 mL, 500 mL Vials
How Dispensed:	OTC
Amount of Active Ingredients:	1% ivermectin solution
Route of Administration:	Subcutaneous injection
Species:	Cattle, Swine, Reindeer, and American Bison
Labeled Dosage:	200 mcg/kg (1 mL/110 lbs) body weight for cattle, reindeer and American bison; 300 mcg/kg for swine.

Indications for Use:

Cattle: Phoenectin™ Injection is indicated in for the effective treatment and control of the following harmful species of gastrointestinal roundworms, lungworms, grubs, sucking lice and mange mites in cattle.

Gastrointestinal Roundworms (adults and fourth stage larvae):
Ostertagia ostertagi (including inhibited *O. ostertagia*)
Haemonchus placei
O. lyrata
Trichostrongylus axei
T. colubriformis
Cooperia oncophora
C. punctata
C. pectinata
Oesophagostomum radiatum
Bunostomum phlebotomum
Nemotidirus helvetianus (adults only)
N. spathiger (adults only)

Lungworms (adults and fourth stage larvae):
Dictyocaulus viviparus

Cattle Grubs (parasitic stages):
Hypoderma bovis
H. lineatum

Sucking Lice:
Linognathus vituli
Haematopinus eurysternus
Solenoptes capillatus

Mites (Scabies):
Sarcoptes scabei var. bovis
Psoroptes ovis (syn. *P. communis* var. *bovis)*

Swine: Phoenectin™ Injection is indicated for the effective treatment and control of the following harmful species of gastrointestinal roundworms, lungworms, lice, and mange mites in swine:

Gastrointestinal Roundworms:
Large roundworm, *Ascaris suum* (adults and fourth stage larvae)
Red stomach worm, *Hyostrongylus rubidus* (adults and fourth stage larvae)
Nodular worm, *Oesphagostomum* spp. (adults and fourth stage larvae
Threadworm, *Strongyloides ransomi* (adults)

Somatic Roundworm Larvae
Threadworm, *Strongyloides ransomi* (somatic larvae)
Sows must be treated at least 7 days before farrowing to prevent infection in piglets.
Lungworms:
Metastrongylus spp. (adults)
Lice:
Haematopinus suis
Mange Mites:
Sarcoptes scabei var. *suis*

Special Minor Use

Reindeer: For the treatment and control of warbles (*Oedemagena tarandi*) in reindeer, inject 200 micrograms ivermectin per kilogram of body weight, subcutaneously. Follow use directions for cattle as described under Administration.
American Bison: For the treatment and control of grubs (*Hypoderma bovis*) in American bison, inject 200 micrograms ivermectin per kilogram of body weight, subcutaneously. Follow use directions for cattle as described under Administration.

Pioneer Product/	Ivomec® Injection for Cattle and Swine (Ivermectin)
"Listed Product:	NADA 128-409 (Merial Ltd.)

2. TARGET ANIMAL SAFETY and DRUG EFFECTIVENESS

Under the provisions of the Federal Food, Drug, and Cosmetic Act, as amended by the Generic Animal Drug and Patent Term Restoration Act, (53 FR 50460, December 15, 1988, First GADPTRA Policy Letter) an abbreviated new animal drug application (ANADA) may be submitted for a generic version of an approved new animal drug (pioneer product). New target animal safety data, drug effectiveness data, and human food safety data (other than tissue residue data) are not required for approval of an ANADA. An ANADA relies on the target animal safety, drug effectiveness, and human food safety data in the pioneer's new animal drug application. The ANADA sponsor is required to show that the generic product is bioequivalent to the pioneer. ANADAs for drug products for food-producing animals will generally be required to include bioequivalence and tissue residue studies. A tissue residue study will generally be required to accompany clinical endpoint and pharmacologic end-point bioequivalence studies, and blood level bioequivalence studies that can not quantify the concentration of the drug in blood throughout the established withdrawal period. For certain dosage forms, the agency will grant a waiver from conducting an *in vivo* bioequivalence study (55 FR 24645, June 18, 1990; Fifth GADPTRA Policy Letter; Bioequivalence Guideline, April 1990).

Based upon the formulation characteristics of the generic product, Phoenix Scientific, Inc. was granted a waiver from conducting an *in vivo* bioequivalence study for Phoenectin™ Injection for Cattle and Swine, with minor uses in reindeer and American bison. The generic and pioneer products contain the same active and inactive ingredients and are injectable solutions.

3. HUMAN FOOD SAFETY:

TOLERANCE:

The tolerances established for the pioneer product apply to the generic product. The marker residue used to monitor the total residues of ivermectin and its metabolites is 22,23-dihydroavermectin B_1a. The target tissue is liver. A tolerance is established for 22,23-dihydroavermectin B_1a in liver as follows:

Cattle: 100 parts per billion [21 CFR 556.344(b)(1)(i)]
Swine: 20 parts per billion [21 CFR 556.344(b)(1)(ii)]
Reindeer: 15 parts per billion [21 CFR 556.344(b)(1)(iv)]
American Bison: 15 parts per billion [21 CFR 556.344(b)(1)(v)]

Muscle residues are not indicative of the safety of other edible tissues. A tolerance is established for 22, 23-dihydroavermectin $B_{1}a$ (marker residue) in muscle, as follows:

(i) Swine. 20 parts per billion. [CFR 556.344(b)(2)(i)]
(ii) Cattle. 10 parts per billion. [CFR 556.344(b)(2)(ii)]

AVERAGE DAILY INTAKE (ADI):

The ADI for total residues of ivermectin is 1 microgram per kilogram of body weight per day. [21 CFR 556.344(a)]

WITHDRAWAL TIME

When a waiver from the requirement of an *in vivo* bioequivalence study is granted, the withdrawal times are those previously assigned to the pioneer product. The slaughter withdrawal times for ivermectin injection are established under 21 CFR 524.1192:

Cattle: 35 days [21 CFR 522.1192(d)(2)(iii)]
Swine: 18 days [21 CFR 522.1192(d)(4)(iii)]
Reindeer: 56 days (8 weeks) [21 CFR 522.1192(d)(3)(iii)]
American Bison 56 days (8 weeks) [21 CFR 522.1192(d)(6)(iii)]

REGULATORY METHODS FOR RESIDUES

The official analytical methods for residues is an HPLC method with fluorescence detection. [The validated regulatory analytical methods for detection of residues of ivermectin are available from the Center for Veterinary Medicine, 7500 Standish Place, Rockville, MD 20855.]

HUMAN SAFETY RELATIVE TO POSSESSION, HANDLING, AND ADMINISTRATION:

Labeling contains adequate caution/warning statements.

4. AGENCY CONCLUSIONS:

This is an Abbreviated New Animal Drug Application (ANADA) filed under section 512(b)(2) of the Federal, Food, Drug and Cosmetic (FFD&C) Act.

Safety and effectiveness for this generic animal drug, Phoenectin™ Injection for Cattle and Swine, were established by demonstration of chemical equivalence to the pioneer product, Merial's Ivomec® Injection for Cattle and Swine (NADA 128-409).

This generic product and the pioneer product have identical labeling indications for use in cattle and swine, with a special minor use in reindeer and American bison. The

route and method of administration of the two drugs are identical. Both drugs are administered subcutaneously. The generic and pioneer products contain the same active and inactive ingredients. Therefore, in compliance with FDA policy promulgated to implement section 512(b)(2) of FFD&C Act, no *in vivo* bioequivalency studies were necessary or required.

This ANADA satisfies the requirements of section 512 of the Act and demonstrates that Phoenectin™ Injection for Cattle and Swine, is safe and effective for its labeled indications when used under the proposed conditions of use.

Attachments:

1. Generic Labeling:

   Package Insert

   Bottle Label

2. Pioneer Labeling

   Package Insert

   Bottle Label