



**Veterinary  
Medicines  
Directorate**

**United Kingdom  
Veterinary Medicines Directorate  
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**MUTUAL REGOGNITION PROCEDURE**

**PUBLICLY AVAILABLE ASSESSMENT REPORT FOR A VETERINARY  
MEDICINAL PRODUCT**

**Prinovox 80 mg + 8 mg Spot-On Solution for Large Cats  
Prinovox 40 mg + 4 mg Spot-On Solution for Small Cats and Ferrets**

**Date Created: July 2017**

**PuAR correct as of 23/04/2018 when RMS was transferred to DE.  
Please contact the RMS for future updates**

## MODULE 1

### PRODUCT SUMMARY

Name, strength and pharmaceutical form	Prinovox 80 mg + 8 mg Spot-On Solution for Large Cats Prinovox 40 mg + 4 mg Spot-On Solution for Small Cats and Ferrets
Applicant	Bayer plc 400 South Oak Way Green Park Reading RG2 6AD UK
Active substance	Imidacloprid Moxidectin
ATC Vetcode	QP54AB52
Target species	Cats, Cat and Ferrets
Indication for use	<p><b>For cats</b> suffering from, or at risk from, mixed parasitic infections:</p> <ul style="list-style-type: none"><li>• For the treatment and prevention of flea infestation (<i>Ctenocephalides felis</i>),</li><li>• the treatment of ear mite infestation (<i>Otodectes cynotis</i>),</li><li>• the treatment of notoedric mange (<i>Notoedres cati</i>),</li><li>• the prevention of heartworm disease (L3 and L4 larvae of <i>Dirofilaria immitis</i>),</li><li>• the treatment of infections with gastrointestinal nematodes (L4 larvae, immature adults and adults of <i>Toxocara cati</i> and <i>Ancylostoma tubaeforme</i>).</li></ul> <p>The product can be used as part of a treatment strategy for flea allergy dermatitis (FAD).</p> <p><b>For ferrets</b> suffering from, or at risk from, mixed parasitic infections:</p> <ul style="list-style-type: none"><li>• For the treatment and prevention of flea infestation (<i>Ctenocephalides felis</i>),</li><li>• the prevention of heartworm disease (L3 and L4 larvae of <i>Dirofilaria immitis</i>).</li></ul>

## MODULE 2

Bayer plc

Publicly Available Assessment Report

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The Summary of Product Characteristics (SPC) for this product is available on the Veterinary Medicines Directorate website ([www.vmd.defra.gov.uk](http://www.vmd.defra.gov.uk))

## MODULE 3

### PUBLIC ASSESSMENT REPORT

Legal basis of original application	Generic application in accordance with Article 13 (1) of Directive 2001/82/EC as amended.
Date of conclusion of the Mutual recognition procedure	22/02/2017
Date product first authorised in the Reference Member State (MRP only)	17/12/2014
Concerned Member States for original procedure	France, Germany, Ireland, Italy, Portugal, Spain.

#### I. SCIENTIFIC OVERVIEW

These were generic applications for multi-strength products, which the reference product was Advocate Spot-on Solution for Small Cats and Ferrets/for Large Cats, available in the UK since April 2003. Bioequivalence is accepted in accordance with section 7.1(d) of the current 'guideline for the conduct of bioequivalence studies for veterinary medicinal products' (EMA/CVMP/016/00-Rev.2) because the applicant is the MAH of the reference product and the formulations are identical.

The products are indicated for cats suffering from or at risk from mixed parasitic infections: flea infestation (*Ctenocephalides felis*), ear mite infestation (*Otodectes cynotis*), notoedric mange (*Notoedres cati*), and the prevention of heartworm disease (L3 and L4 larvae of *Dirofilaria immitis*). In addition, treatment of infections with gastrointestinal nematodes (L4 larvae, immature adults and adults of *Toxocara cati* and *Ancylostoma tubaeforme*). The product can also be used as part of a treatment strategy for flea allergy dermatitis.

The solution for small cats and ferrets can be used to treat ferrets suffering from or at risk from mixed parasitic infections as follows: treatment and prevention of *Ctenocephalides felis*, and the prevention of heartworm disease (L3 and L4 larvae of *Dirofilaria immitis*).

The recommended doses are as follows:

CATS: One 0.4 ml pipette (small cats) or one 0.8ml pipette (large cats).

Cats over 4 kg bodyweight should be administered the products for large cats:

FERRETS: One 0.4 ml pipette per animal.

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The products are produced and controlled using validated methods and tests which ensure the consistency of the product released on the market. It has been shown that the products can be safely used in the target species, any reactions observed are indicated in the SPC.<sup>1</sup> The products are safe for the user, and for the environment, when used as recommended. Suitable warnings and precautions are indicated in the SPC. The efficacy <sup>2</sup> of the products was demonstrated according to the claims made in the SPC. The overall benefit/risk analysis is in favour of granting a marketing authorisation.

## **II. QUALITATIVE AND QUANTITATIVE PARTICULARS OF THE CONSTITUENTS**

### ***II.A. Composition***

The products contain imidacloprid and moxidectin at varying concentrations, and the excipients are butylhydroxytoluene E321, benzyl alcohol and propylene carbonate.

The container/closure system consists of white screw-cap polypropylene pipettes containing various quantities of product. The particulars of the containers and controls performed are provided and conform to the regulation.

The choice of the formulation and the absence of preservative are justified. The product is an established pharmaceutical form and its development is adequately described in accordance with the relevant European guidelines.

### ***II.B. Description of the Manufacturing Method***

The products are manufactured fully in accordance with the principles of good manufacturing practice from a licensed manufacturing site. Process validation data on the product have been presented in accordance with the relevant European guidelines. The manufacturing process is a sequential dissolution process. Benzyl alcohol is stirred and butylhydroxytoluene added. Propylene carbonate is added, followed by the active substances. The product is filtered and filled into the appropriate containers.

### ***II.C. Control of Starting Materials***

The active substances are imidacloprid and moxidectin, established active substances. Moxidectin is described in the European Pharmacopoeia (Ph. Eur), and is produced in accordance with a Certificate of Suitability. Imadacloprid is controlled by an in-house specification. The active substances are manufactured in accordance with the principles of good manufacturing practice. Each excipient is monographed, (benzyl alcohol and butylhydroxytoluene E 321: Ph Eur.; propylene carbonate: United States Pharmacopeia).

The active substance specification is considered adequate to control the quality

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<sup>1</sup> SPC – Summary of product Characteristics.

<sup>2</sup> Efficacy – The production of a desired or intended result.

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of the material. Batch analytical data demonstrating compliance with this specification have been provided.

#### ***II.C.4. Substances of Biological Origin***

There are no substances within the scope of the TSE Guideline present or used in the manufacture of this product.

#### ***II.D. Control Tests Carried Out at Intermediate Stages of the Manufacturing Process***

The tests performed during production are described and the results of 3 consecutive runs, (3 older batches, 3 new batches), conforming to the specifications, are provided. The intermediate product can be stored for up to 12 months with additional benzaldehyde testing during development.

#### ***II.E. Control Tests on the Finished Product***

The finished product specification controls the relevant parameters for the pharmaceutical form. The tests in the specification, and their limits, have been justified and are considered appropriate to adequately control the quality of the product. Satisfactory validation data for the analytical methods have been provided. Batch analytical data from the proposed production site have been provided demonstrating compliance with the specification. Tests on the finished product include those for clarity, colour, identity, density, water content, purity, uniformity of content and microbiological quality.

#### ***II.F. Stability***

Stability data on the active substances have been provided in accordance with applicable European guidelines, demonstrating the stability of the active substance when stored under the approved conditions.

##### Active Substances

For moxidectin, stability data were provided for 3 batches of product stored in commercial packaging under suitably controlled conditions. The product was stored in refrigerated conditions for 24 months (2-8°C), and for 24 months at 25°C/60% RH. Data supported a retest at the refrigerated temperature for 2 years.

For imidacloprid, 3 commercial batches were stored at 25°C/60% RH and 40°C/75% RH for 24 months and 12 months respectively. The active substance was very stable with no special storage conditions required. The proposed retest period of 2 years was satisfactory.

##### Finished products

Batches were stored at 25°C/60% RH, 30°C/50% RH, 30°C/80% RH and 40°C/75% RH. All data were considered acceptable.

## **G. Other Information**

Shelf life of the veterinary medicinal product as packaged for sale: 3 years.  
Do not store above 25°C

## **III. SAFETY AND RESIDUES DOCUMENTATION (PHARMACOTOXICOLOGICAL)**

As these were generic applications according to Article 13 (1), and bioequivalence with a reference product has been established, results of safety and residues tests were not required.

Warnings and precautions as listed on the product literature are the same as those of the reference product and are adequate to ensure safety of the product to users and the environment.

### **III.A Safety Documentation**

#### **User Safety**

A User Risk Assessment was not submitted with these applications. Because the products are identical to the reference product, this was acceptable. The warnings and precautions as listed on the product literature are identical to the reference product:

- Avoid contact with skin, eyes or mouth.
- Do not eat, drink or smoke during application.
- Wash hands thoroughly after use.
- After application do not stroke or groom animals until the application site is dry.
- In case of accidental spillage onto skin, wash off immediately with soap and water.
- People with a known hypersensitivity to benzyl alcohol, imidacloprid or moxidectin should administer the product with caution. In very rare cases the product may cause skin sensitisation or transient skin reactions (for example numbness, irritation or burning/tingling sensation).
- In very rare cases the product may cause respiratory irritation in sensitive individuals.
- If the product accidentally gets into eyes, they should be thoroughly flushed with water.
- If skin or eye symptoms persist, or the product is accidentally swallowed, seek medical advice immediately and show the package leaflet or label to the physician.

## ***Environmental Safety***

### **Phase I:**

An extended Phase I risk assessment was provided. The product will only be used in non-food animals and as a result environmental exposure will be low. A Phase II ERA was not required. The products are intended only for non-food producing species which are unlikely to enter water courses after treatment with the ectoparasiticide product. The SPC carries adequate warnings:

- Any unused product or waste materials derived from such veterinary medicinal products should be disposed of in accordance with local requirements.
- The product should not enter water courses as this may be dangerous for fish and other aquatic organisms.

## **IV CLINICAL DOCUMENTATION**

As these were generic applications according to Article 13 (1), and bioequivalence with a reference product has been established, efficacy studies were not required. The efficacy claims for this product are equivalent to those of the reference product.

### ***IV.I. Pre-Clinical Studies***

#### ***Pharmacology***

##### Pharmacodynamics

No data were submitted, however, relevant data reflects that of the reference product, and this is acceptable.

Imadacloprid is an ectoparasiticide which belongs to the chloronicotinyl group of compounds, effective against a variety of parasites. Inhibition of cholinergic transmission results in paralysis and death of the parasite. There is virtually no effect on mammalian cholinergic transmission due to the weak interaction of the active substance with mammalian nicotinic receptors and probable poor penetration of the blood-brain barrier.

Moxidectin is a second generation macrocyclic lactone belonging to the milbemycin family, and is a parasiticide interacting with GABA<sup>3</sup> and glutamate-gated chloride channels. This ultimately causes flaccid paralysis of parasites, followed by death or expulsion.

##### Pharmacokinetics

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<sup>3</sup> GABA – gamma-amino butyric acid.



No data were submitted, however, relevant data reflects that of the reference product, and this is acceptable.

Imidacloprid is rapidly absorbed via the skin and can be located on the body surface during the treatment interval. Moxidectin is also absorbed through the skin, attaining maximum plasma concentrations approximately 4-9 days after treatment. Systemic distribution follows, followed by slow elimination.

### ***Tolerance in the Target Species***

No data were submitted. Warnings in the SPC reflect those of the reference products.

### ***Resistance***

The applicant provided an update on the resistance in the target parasites. The SPC carries suitable warnings, which define the possibility of resistance developing to the products. It is advised that local epidemiological information be taken into account when the products are prescribed.

## **V OVERALL CONCLUSION AND BENEFIT– RISK ASSESSMENT**

The data submitted in the dossier demonstrate that when the product is used in accordance with the Summary of Product Characteristics, the benefit/risk profile of the product(s) is favourable

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## **MODULE 4**

### **POST-AUTHORISATION ASSESSMENTS**

The SPC and package leaflet may be updated to include new information on the quality, safety and efficacy of the veterinary medicinal product. The current SPC is available on the Product Information Database of the Veterinary Medicines Directorate website.

[www.gov.uk/check-animal-medicine-licensed](http://www.gov.uk/check-animal-medicine-licensed)

The post-authorisation assessment (PAA) contains information on significant changes which have been made after the original procedure which are important for the quality, safety or efficacy of the product.

The PAA for this product is available on the Product Information Database of the Veterinary Medicines Directorate website.

[www.gov.uk/check-animal-medicine-licensed](http://www.gov.uk/check-animal-medicine-licensed)