



**ASSURING THE SAFETY, QUALITY AND EFFICACY
OF VETERINARY MEDICINES**

**United Kingdom
Veterinary Medicines Directorate
Woodham Lane
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NATIONAL PROCEDURE

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

RSPCA FleaAway 50 mg Spot-On Solution for Cats

MODULE 1

PRODUCT SUMMARY

Name, strength and pharmaceutical form	RSPCA FleaAway 50 mg Spot-On Solution for Cats
Applicant	KRKA, d.d., Novo mesto Šmarješka cesta 6 8501 Novo mesto Slovenia
Active substance	Fipronil
ATC Vetcode	QP53AX15
Target species	Cats
Indication for use	<p>Treatment of fleas (<i>Ctenocephalides</i> spp.) and tick (<i>Dermacentor reticulatus</i>, <i>Ixodes ricinus</i>) infestations in cats.</p> <p>The product has a persistent insecticidal efficacy for up to 4 weeks against fleas (<i>Ctenocephalides</i> spp.) and acaricidal efficacy for up to 4 weeks against <i>Ixodes ricinus</i> and for up to 1 week against <i>Dermacentor reticulatus</i> and <i>Rhipicephalus sanguineus</i>. If <i>Rhipicephalus sanguineus</i> ticks are present when the product is applied, all the ticks may not be killed within the first 48 hours but they may be killed within a week.</p>

MODULE 2

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

MODULE 3

PUBLIC ASSESSMENT REPORT

Legal basis of original application	Generic 'hybrid' application in accordance with Article 13 (3) of Directive 2001/82/EC as amended.
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I. SCIENTIFIC OVERVIEW

This was a generic 'hybrid' application, where bioequivalence cannot be established via bioavailability studies with a reference product. In this case, the product is a spot-on with little or no trans-cutaneous absorption. Bioequivalence was established via clinical equivalence. The original reference product was Frontline Spot On Cat, 10% w/v spot on solution (available in the UK since 1996). Subsequent products authorised, for which the same data as presented for this application were submitted, were Eliminal 50 mg Spot-On Solution for Cats and Fyperix 50 mg Spot-on Solution for Cats. The marketing authorisations for Eliminal and Fyperix are held by the current applicant. The RSPCA FleaAway product is intended for the treatment of fleas (*Ctenocephalides* spp.), and tick (*Dermacentor reticulatus*, *Ixodes ricinus*) infestations in cats. Persistent insecticidal activity is seen for up to 4 weeks against fleas (*Ctenocephalides* spp.) and acaricidal activity is seen for up to 4 weeks in ticks (*Ixodes ricinus*), and for up to 1 week against *Dermacentor reticulatus* and *Rhipicephalus sanguineus*. If *Rhipicephalus sanguineus* ticks are present when the product is applied, all the ticks may not be killed within the first 48 hours but they may be killed within a week.

The product is 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 product can be safely used in the target species, the slight reactions observed are indicated in the SPC.¹ The product is safe for the user, and for the environment, when used as recommended. Suitable warnings and precautions are indicated in the SPC. The efficacy of the product was demonstrated according to the claims made in the SPC. The overall benefit/risk analysis is in favour of granting a marketing authorisation.

¹ SPC - Summary of Product Characteristics.

II. QUALITY ASPECTS

A. Composition

The product contains 50 mg fipronil in a 0.5 ml pipette, as the active substance and the excipients butylhydroxyanisole (E320), butylhydroxytoluene (E321), polysorbate 80, povidone K25 and dimethyl sulfoxide.

The container/closure system consists of white polypropylene pipette closed with either a polyethylene or polyoxymethylene cap. Each 0.5 ml pipette is packed in a polyethylene terephthalate/aluminium/low density polyethylene triplex bag.

A box contains 1, 3, 6, 10, 20 or 30 pipettes. Not all pack sizes may be marketed.

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.

B. Method of Preparation of the Product

The product is 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 consists of several solubilisation and mixing steps, followed by final fill into pipettes.

C. Control of Starting Materials

The active substance is fipronil, an established active substance substance not described in the European Pharmacopoeia (Ph. Eur). The active substance is manufactured in accordance with the principles of good manufacturing practice. All excipients are monographed in the Ph. Eur.

The active substance specification is considered adequate to control the quality of the material. Batch analytical data demonstrating compliance with this specification have been provided.

D. Specific Measures concerning the Prevention of the Transmission of Animal Spongiform Encephalopathies

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

E. Control on intermediate products

Not applicable.

F. 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 include relevant general characteristics, identification, quantitative determination and purity test.

G. Stability

Stability data on the active substance have been provided in accordance with applicable European guidelines, demonstrating the stability of the active substance when stored under the approved conditions. A retest period of 2 years was deemed satisfactory. Stability data on the finished product have been provided in accordance with applicable European guidelines, demonstrating the stability of the product throughout its shelf life when stored under the approved conditions. Data were available from batches were stored under real time (25°C/60% RH), or accelerated conditions (40°C/75% RH), for 36 months and 6 months respectively. The shelf-life as described in the SPC is appropriate.

H. Genetically Modified Organisms

Not applicable.

J. Other Information

Shelf-life of the veterinary medicinal product as packaged for sale: 36 months. Store in the original container in order to protect from light and moisture. The product should be maintained at room temperature (above 14°C) for approximately one hour prior to administration.

III. SAFETY AND RESIDUES ASSESSMENT (PHARMACOTOXICOLOGICAL)

For generics, insert in the relevant sections as appropriate:

III.A Safety Testing

Pharmacological Studies

Pharmacodynamics

Fipronil is an insecticide and acaricide belonging to the phenylpyrazole family. It acts by inhibiting the GABA complex, binding to the chloride channel and thereby blocking pre-and post-synaptic transfer of chloride ions across cell membranes. This results in uncontrolled activity of the central nervous system and death of insects or acarids.

Pharmacokinetics

In vitro, fipronil is mainly metabolised with subcellular liver fractions to its sulfone derivative. However, this may be of limited relevance "*in vivo*" as fipronil is poorly absorbed in the cat.

Toxicological Studies

The applicant provided bibliographical data:-

- **Single Dose Toxicity**

Data were provided on the acute toxicity of fipronil. In studies, the LD₅₀² values were cited as 97 mg/kg (oral, rats), and 95 mg/kg (oral, mice). An LC₅₀³ of 0.36-0.42 mg/l was noted in rats after one inhalation exposure. Dermal LD₅₀ in rats, administered fipronil in distilled water, exceeded 2000 mg/kg, and when moistened with corn oil a dermal LD₅₀ of 354 mg/kg was exhibited in rabbits. Adverse clinical signs were not seen in rats, but proved moderately hazardous in rabbits.

- **Repeated Dose Toxicity**

A review of a series of repeat dose studies was provided, which established the basis of the user risk assessment (URA). NOEL⁴ were established for some of the studies. A 13 week study in rats, administered fipronil in the diet, resulted in a NOEL of 0.33 mg/kg bodyweight. Alterations were observed in serum protein values, and increased liver and thyroid weights were additionally observed. In a 13 week oral study (gelatine capsules) in dogs, a NOEL of 0.5 mg/kg bodyweight was observed. The highest dose administered was 10 mg/kg, at which neurotoxicological effects were observed. Two further oral studies in dogs, conducted over a year, resulted in NOEL of 0.2 mg/kg (gelatine capsules), and 0.3 mg/kg (fipronil in the diet) respectively. In the first study, neurotoxicity was seen at doses higher than 2 mg/kg, and in the second study, at the next highest dose within the study, which was 1.0 mg/kg. A 21 day dermal study in rabbits established a NOEL of 5.0 mg/kg, with systemic effects resulting at the end of the study that were possibly related to treatment. No skin irritation was observed.

- **Reproductive Toxicity, including Teratogenicity:**

Suitable published studies were provided. During a two-generation study of reproductive toxicity, adverse reproductive effects were noted only at doses well above those which caused parental systemic toxicity. A further study in which 70, 140 or 280 mg/kg were administered to 2 rats was provided. Results indicated that fipronil at high doses caused adverse reproductive effects. No embryotoxic effects were noted in a study in which female rats were given up to 20 mg/kg during gestation, and in a similar study in rabbits, no effects were noted at the highest dose of 1 mg/kg.

- **Mutagenicity**

Various studies were submitted which indicated that fipronil was not genotoxic.

- **Carcinogenicity (if necessary):**

² LD₅₀ – dose that will destroy half of a test population.

³ LC₅₀ – concentration that will destroy half a target population.

⁴ NOEL – No observed effect limit.

Studies in rats indicated that at high levels, fipronil causes non-genotoxic thyroid changes. A NOAEL⁵ for neurotoxic changes was established at 0.019 mg/kg. It was noted that rats are more sensitive than humans to thyroid changes.

- Studies of other effects

Fipronil was shown not to be a dermal irritant in 2 dermal studies in rabbits, and was seen to be only slightly irritant in 2 ocular studies in rabbits. In guinea-pigs, the active substance was not a sensitiser when tested by the Buehler method, but was a weak sensitiser under the Magnusson-Kligman method.

In a single-dose neurotoxicity study in rats, a NOAEL of 0.5 mg/kg was calculated at the high 5 mg/kg dose. Neurotoxic signs were also observed in a study in dogs receiving daily oral doses of 20 mg/kg. In a developmental neurotoxicity study in rats, a NOAEL of 0.9 mg/kg was noted.

Observations in Humans

The applicant provided bibliographical data. A 77 year old woman ingested a product containing 0.14 mg of fipronil, but did not exhibit toxic effects. A 50 year old man showed sign of fipronil toxicity following the spraying of fields whilst wearing no protective equipment. Symptoms consisted of headache, nausea, vertigo and weakness, and these resolved spontaneously over approximately 5 hours. A further report cited several people ingesting large but unknown amounts of fipronil for agricultural use. Vomiting, agitation and seizures were observed, but all recovered.

User Safety

The applicant provided a URA which was identical to the reference product, and with certain additions subsequently added, this was acceptable. The URA cites the active substance and the major metabolite, the photodegradation product, fipronil-desulfinyl. A further report was provided on the major excipient, dimethyl sulphoxide (DMSO), which is not present in the reference product. Suitable data were provided which determined the safety data provided within the SPC. Warnings and precautions as listed on the product literature are adequate to ensure safety to users of the product.

- This product can cause mucous membrane and eye irritation. Therefore, contact between the product and the mouth or eyes should be avoided.
- In the case of accidental eye contact, immediately and thoroughly flush the eyes with water. If eye irritation persists seek medical advice and show the package leaflet or the label to the physician.
- Avoid contents coming into contact with the fingers. If this occurs, wash off immediately with soap and water.
- Wash hands after use.
- Do not smoke, drink or eat during application.
- People with a known hypersensitivity to fipronil or dimethyl sulfoxide or other excipients should avoid contact with the veterinary medicinal product.

⁵ NOAEL – No observed adverse effect level.

- Treated animals should not be handled until the application site is dry, and children should not be allowed to play with treated animals until the application site is dry. It is therefore recommended that animals are not treated during the day, but should be treated during the early evening, and that recently treated animals should not be allowed to sleep with owners, especially children.
- Keep pipettes in the original packaging and dispose of used pipettes immediately.

Ecotoxicity

The applicant provided a Phase I environmental risk assessment in compliance with the relevant guideline. It was agreed that the product will under normal circumstances only be placed within the coat of individual cats. Warnings and precautions as listed on the product literature are adequate to ensure safety to the environment when the product is used as directed.

- Any unused veterinary medicinal product or waste materials derived from such veterinary medicinal products should be disposed of in accordance with local requirements.
- Fipronil may adversely affect aquatic organisms. Do not contaminate ponds, waterways or ditches with the product or empty container.

IV CLINICAL ASSESSMENT (EFFICACY)

IV.A Pre-Clinical Studies

Pharmacology

As this was a 'hybrid' application, no further data were required for this section.

Tolerance in the Target Species of Animals

The applicant conducted a GLP⁶-compliant target animal safety study. A suitable number of young cats received the product, in a blinded, parallel grouped, randomised, and negatively controlled study in a two-phase design. The animals were divided into groups, and received treatment which consisted of placebo, or the recommended dose, three times the recommended dose, or five times the recommended dose. No adverse reactions to the treatment were observed, in the different groups, or between male and female animals.

⁶ GLP – Good Laboratory Practise.

Resistance

Published data were provided to confirm that there is a low risk of resistance developing in the target parasites. Adequate warnings and precautions appear on the product literature.

IV.B Clinical Studies

Laboratory Trials

The applicant provided data that had previously been assessed for the reference products. This was acceptable.

Dose confirmation studies:

Study 1

Study title	Dose confirmation study to evaluate the efficacy of a topically applied spot-on formulation of 10% fipronil against ticks (<i>Dermacentor reticulatus</i>) and the cat flea (<i>Ctenocephalides felis</i>) on cats under laboratory conditions.
Objectives	To evaluate the efficacy of a topically applied spot-on formulation of 10% fipronil against ticks (<i>Dermacentor reticulatus</i>) and the cat flea (<i>Ctenocephalides felis</i>) on cats under laboratory conditions.
Test site(s)	Laboratory environment. Single centre.
Compliance with Regulatory guidelines	Good Clinical Practice (GCP)
Test Product	Fipronil Spot-On for Cats (10% fipronil), synonymous with the product to be authorised. Product delivered at 0.5 ml.
Control product/placebo	Control product, Frontline Spot On Cat 10% w/v Spot-On Solution at 0.5 ml. Negative control group (no treatment).
Animals	Healthy adult and sub adult cats, 7 animals in each group.
Outcomes/endpoints	Determine the efficacy of a generic spot-on formulation against fleas and ticks on cats. Efficacy of the test product was compared to the negative control product and reference product up to Day 37 for fleas and Day 30 for ticks.
Randomisation	Randomised.
Blinding	Coded groups.
Method	This was a block design study. After acclimatisation, animals were infested with approximately 100 fleas and 50 ticks, at various time points treated according to their respective groups. Flea and tick counts were performed on several occasions up to Day 30/37, as appropriate.
Statistical method	Statistical analysis was performed using appropriate software. All tests were two-sided. Level of significance

		was set at 5% (p<0.05). Analysis was by geometric or arithmetic means. ANOVA (Analysis of Variance) was used to compare groups.
RESULTS		
Outcomes endpoints	for	<p><u>Flea Counts</u></p> <p><u>Efficacy against <i>C. felis</i></u> There was no evidence of a statistically significant difference between the two treated groups. No treatment-related adverse effects were noted. Comparable efficacy was observed for both treatment groups (>95%), supporting the claim for a 4 week persistent effectiveness against <i>C. felis</i>.</p> <p><u>Tick Counts</u></p> <p><u>Efficacy against <i>D. reticulatus</i></u> There was no evidence of a statistically significant difference between the two treated groups. No treatment-related adverse effects were noted. Comparable efficacy was observed for both treatment groups (>90%), providing supporting evidence for a 1 week persistent effectiveness against <i>D. reticulatus</i>.</p>
DISCUSSION		The product was shown to be effective against the target parasites.

Study 2

Study title	Dose confirmation study to evaluate the efficacy of a topically applied spot-on formulation of a 10% fipronil product against ticks (<i>Dermacentor reticulatus</i>) and the cat flea (<i>Ctenocephalides felis</i>) on cats under laboratory conditions.
Objectives	To evaluate the efficacy of a topically applied spot-on formulation of 10% fipronil against ticks (<i>Dermacentor reticulatus</i>) and the cat flea (<i>Ctenocephalides felis</i>) on cats under laboratory conditions.
Test site(s)	Laboratory environment. Single site.
Compliance with Regulatory guidelines	Good Clinical Practice (GCP)
Test Product	Fipronil Spot-On for Cats (10% fipronil), synonymous with the product to be authorised. Product delivered at 0.5 ml.
Control product/placebo	Control product, Frontline Spot On Cat 10% w/v Spot-On Solution at 0.5 ml. Negative control group (no treatment).
Animals	Healthy adult and sub adult cats, 8 animals in each group.
Outcomes/endpoints	Determine the efficacy of a generic spot-on formulation against fleas and ticks on cats. Efficacy of the test product was compared to the negative control and reference product up to Day 23 for fleas and Day 16 for

		ticks.
Randomisation		Randomised.
Blinding		Coded groups.
Method		This was a block design study. After acclimatisation, animals were infested with approximately 100 fleas and 50 ticks, at various time points and then treated according to their respective groups. Flea and tick counts were performed at several time points up to Day 23/16, as appropriate.
Statistical method		Statistical analysis was performed using appropriate software. All tests were two-sided. Level of significance was set at 5% (p<0.05). Analysis was by geometric or arithmetic means. ANOVA (Analysis of Variance) was used to compare groups.
RESULTS		
Outcomes endpoints	for	<p><u>Flea Counts</u></p> <p><u>Efficacy against <i>C. felis</i></u> There was no evidence of a statistically significant difference between the two treated groups. No treatment-related adverse effects were noted. Comparable efficacy was observed for both treatment groups (>95%), eventually providing supporting evidence for a claim for a 4 week persistent effectiveness against <i>C. felis</i>.</p> <p><u>Tick Counts</u></p> <p><u>Efficacy against <i>D. reticulatus</i></u> There was no evidence of a statistically significant difference between the two treated groups. No treatment-related adverse effects were noted. Comparable efficacy was observed for both treatment groups providing supporting evidence for a claim for a 1 week persistent effectiveness.</p>
DISCUSSION		The product was shown to be effective against the target parasites.

Study 3

Study title	A controlled, randomised study to evaluate a single application of a 10% fipronil product as a tick treatment for <i>Ixodes ricinus</i> on cats artificially infested with ticks under laboratory conditions.
Objectives	To evaluate a single application of a 10% fipronil product as a tick treatment for <i>Ixodes ricinus</i> on cats artificially infested under laboratory conditions.
Test site(s)	Laboratory environment. Single centre.
Compliance with Regulatory guidelines	Good Clinical Practice (GCP)
Test Product	Fipronil Spot-On for Cats (10% fipronil), synonymous with the product to be authorised. Product delivered at

	0.5 ml.
Control product/placebo	Control product, Frontline Spot On Cat 10% w/v Spot-On Solution at 0.5 ml. Negative control group (no treatment).
Animals	Healthy adult and sub adult cats, 8 animals in each group.
Outcomes/endpoints	Determine the efficacy of a generic spot-on formulation against fleas and ticks on cats. Efficacy of the test product was compared to the negative control and reference product up to Day 16.
Randomisation	Randomised.
Blinding	Coded groups.
Method	The study was of a block design. After acclimatisation, animals were infested with approximately 60 ticks at various different time points and then treated according to their respective groups. Tick counts were performed on several occasions up to Day 16.
Statistical method	Statistical analysis was performed using appropriate software. All tests were two-sided. Level of significance was set at 5% (p<0.05). A Mixed model Analysis of Variance was used, with a 90% reduction in ticks expected from the treatment.
RESULTS	
Outcomes for endpoints	<u>Tick Counts</u> There was no evidence of a statistically significant difference between the two treated groups. No treatment-related adverse effects were noted, a further test on <i>I. Ricinus</i> was provided (Study 5).
DISCUSSION	The product was shown to be effective against the target parasite. The SPC states that insecticidal efficacy is seen up to 4 weeks after dosing.

Study 4

Study title	Dose confirmation study to evaluate the efficacy of a topically applied spot-on formulation 10% fipronil against the cat flea <i>Ctenocephalides felis</i> on cats under laboratory conditions.
Objectives	To evaluate the efficacy of a topically applied spot-on formulation of 10% fipronil against the cat flea <i>Ctenocephalides felis</i> on cats under laboratory conditions.
Test site(s)	Laboratory environment. Single site
Compliance with Regulatory guidelines	Good Clinical Practice (GCP)
Test Product	Fipronil Spot-On for Cats (10% fipronil), synonymous with the product to be authorised. Product delivered at 0.5 ml.
Control product/placebo	Negative control group (no treatment).

Animals	Healthy adult and sub adult cats, 8 animals in each group.
Outcomes/endpoints	Determine the efficacy of a generic spot-on formulation against fleas on cats. Efficacy of the test product was compared to the negative control up to Day 37.
Randomisation	Randomised.
Blinding	Coded groups.
Method	This was a block design study. After acclimatisation, animals were infested with approximately 100 fleas at various different time points, and then treated according to their respective groups. Flea counts were performed at various time points up to Day 37.
Statistical method	Statistical analysis was performed using appropriate software. All tests were two-sided. Level of significance was set at 5% (p<0.05). Analysis was by geometric or arithmetic means. ANOVA (Analysis of Variance) was used to compare groups.
RESULTS	
Outcomes for endpoints	<u>Flea Counts</u> The results provided support for a claim for immediate efficacy (>95%) and also provided evidence for a claim of persistent efficacy for up to 4 weeks in the SPC.
DISCUSSION	The product was shown to be effective against the target species. The SPC carries appropriate indication data; the product exhibits efficacy for up to 4 weeks against <i>C. felis</i> .

Study 5

Study title	Controlled, randomised study to evaluate the efficacy of a single application of Fipronil Spot-On for Cats (10% fipronil) when compared with an untreated control against artificially induced infestations of ticks (<i>Ixodes ricinus</i>) on cats under laboratory conditions.
Objectives	To evaluate the efficacy of a single application of Fipronil Spot-On for Cats (10% fipronil) when compared with an untreated control against artificially induced infestations of ticks (<i>Ixodes ricinus</i>) on cats under laboratory conditions.
Test site(s)	Laboratory environment. Single site
Compliance with Regulatory guidelines	Good Clinical Practice (GCP)
Test Product	Fipronil Spot-On for Cats (10% fipronil), synonymous with the product to be authorised. Product delivered at 0.5 ml.
Control product/placebo	Negative control group (no treatment).
Animals	Healthy adult and sub adult cats, 8 animals in each group.
Outcomes/endpoints	Determine the efficacy of a generic spot-on formulation against ticks on cats. Efficacy of the test product was

	compared to the negative control up to Day 37.
Randomisation	Randomised.
Blinding	Coded groups.
Method	This was a block design study. After acclimatisation, animals were infested with approximately 60 ticks at various time points, and then treated according to their respective groups. Tick counts were performed at various time points up to Day 37.
Statistical method	Statistical analysis was performed using appropriate software. All tests were two-sided. Level of significance was set at 5% ($p < 0.05$). Analysis was by geometric or arithmetic means. ANOVA (Analysis of Variance) was used to compare groups.
RESULTS	
Outcomes for endpoints	The results provided support for a claim for immediate efficacy (>90%) and also provided evidence for a claim of persistent efficacy for up to 4 weeks in the SPC.
DISCUSSION	The product was shown to be effective against the target species. The SPC carries specific data.

A study was provided for Eliminal 50 mg Spot-On Solution for Cats, (which is therefore relevant for this product), by way of variation, in order to update the indication for *D. reticulatus*. This enabled the claim in the SPC to be adjusted to include immediate efficacy for that target species, which is then maintained for up to 1 week.

Study 6

Study title	To determine the immediate efficacy of a 10% fipronil solution for cats compared with an untreated control against artificially induced infestations of tick (<i>Dermacentor reticulatus</i>) on cats
Objectives	To determine the immediate efficacy of a 10% fipronil solution for cats compared with an untreated control against artificially induced infestations of tick (<i>Dermacentor reticulatus</i>) on cats
Test site(s)	Laboratory environment. Single site
Compliance with Regulatory guidelines	Good Clinical Practice (GCP)
Test Product	Fipronil Spot-On for Cats (10% fipronil), synonymous with the product to be authorised. Product delivered at 0.5 ml.
Control product/placebo	Negative control group (no treatment).
Animals	Healthy adult and sub adult cats, 7 animals in each group.
Outcomes/endpoints	Determine the efficacy of a generic spot-on formulation against ticks on cats. Efficacy of the test product was compared to the negative control up to Day 2.
Randomisation	Randomised.

Blinding	Coded groups.
Method	This was a block design study. After acclimatisation, animals were infested with approximately 60 and then treated according to their respective groups. Tick counts were performed at various time points up to Day 2.
Statistical method	Statistical analysis was performed using appropriate software. All tests were two-sided. Level of significance was set at 5% (p<0.05). Analysis was by geometric and arithmetic means. ANOVA (Analysis of Variance) was used to compare groups.
RESULTS	
Outcomes for endpoints	The results provided support for a claim for immediate efficacy (>91%).
DISCUSSION	The product was shown to be effective against <i>D. reticulatus</i> . The SPC carries specific data.

The studies conducted supported the claims in the authorised SPC, in compliance with the requirements laid out in the Guideline for the testing and evaluation of the efficacy of antiparasitic substances for the treatment and prevention of tick and flea infestation in dogs and cats EMEA/CVMP/EWP/005/2000-Rev.2 June2008.

Field Trials

Field studies were not required for this hybrid application.

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 for the target species is favourable and the quality and safety of the product for humans and the environment is acceptable.

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

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