

# ROCK-SOLID FLEA AND TICK PROTECTION

STRONGHOLD<sup>®</sup> PLUS protects cats from a broad-spectrum of parasites **NOW INCLUDING 4 PROMINENT SPECIES OF TICKS FOUND ON CATS, INCLUDING IXODES HEXAGONUS, ONE OF THE MOST COMMON TICKS FOUND ON CATS**\*<sup>1,2,3</sup>

\*Cats in the UK.





# STRONGHOLD® PLUS

utilises the combined action of selamectin + sarolaner

# STRONGHOLD® PLUS

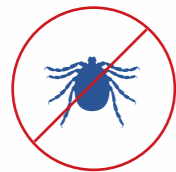
is the new, improved endectocide for cats that kills fleas fast before they can lay eggs

## Enhancing STRONGHOLD®



By combining **selamectin and sarolaner**, STRONGHOLD® has been enhanced by the addition of **sarolaner to selamectin**, bringing you **STRONGHOLD® PLUS**, which offers comprehensive flea and tick protection in one convenient, monthly dose

- STRONGHOLD® PLUS provides fast, sustained coverage from the ticks most often found on cats
- STRONGHOLD® PLUS kills fleas fast, before they can lay eggs
- STRONGHOLD® PLUS is low volume and easy to use
- STRONGHOLD® PLUS broadens the spectrum of protection to 4 prominent species of feline ticks



TICKS

- Ixodes ricinus*
- Ixodes hexagonus*
- Dermacentor reticulatus*
- Rhipicephalus sanguineus*

One dose eliminates ticks within **24 hours\*** for **1 month**  
One dose eliminates ticks for **5 full weeks†**

- STRONGHOLD® PLUS extends the duration of protection against fleas



FLEAS

One dose eliminates fleas (*Ctenocephalides spp.*) within **24 hours** for **5 weeks**

- STRONGHOLD® PLUS maintains proven efficacy against gastrointestinal worms, heartworm, ear mites and lice



HOOKWORMS



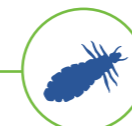
ROUNDWORMS



HEARTWORM



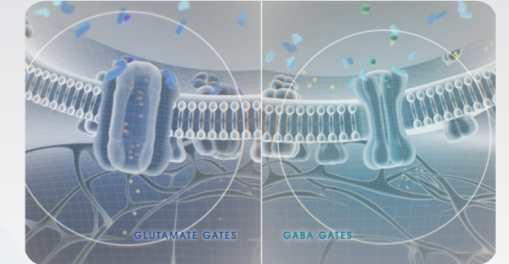
EAR MITES



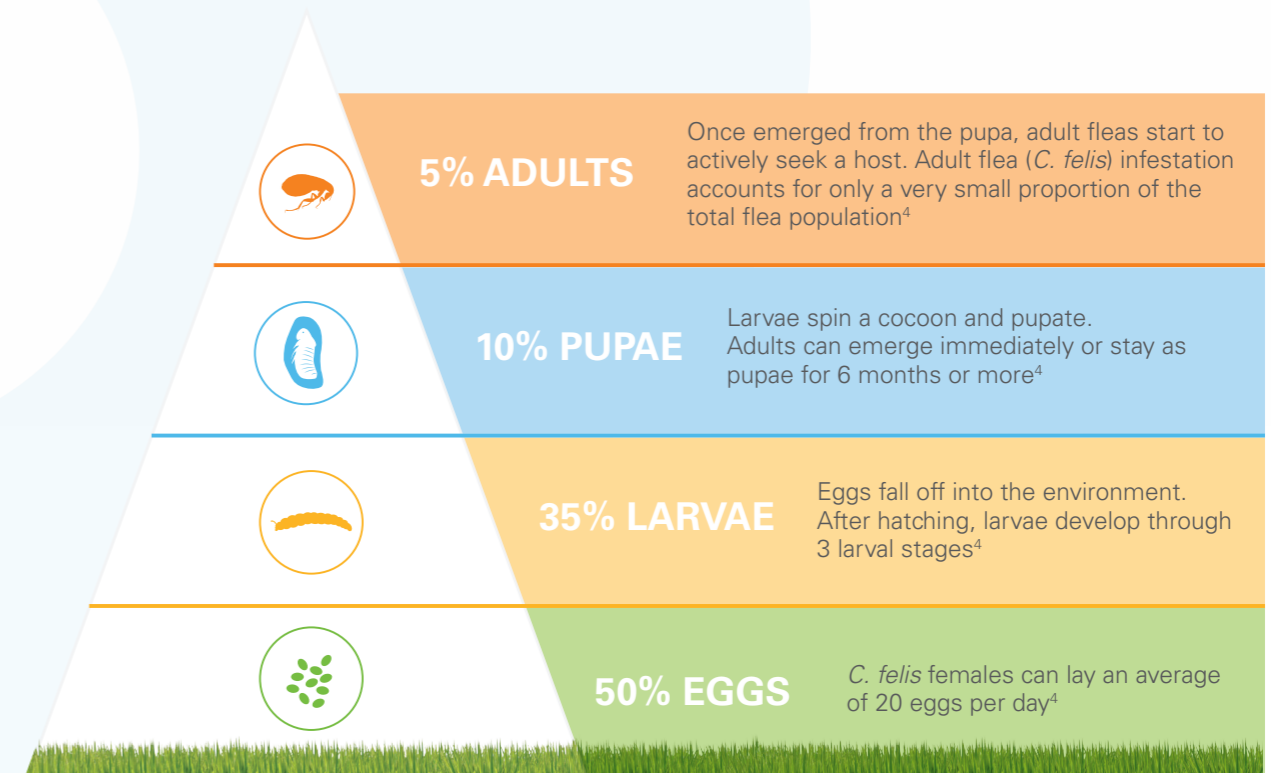
LICE

## STRONGHOLD® PLUS has a dual mode of action

- Selamectin and sarolaner work in parallel at their two corresponding primary binding sites of glutamate and GABA-gated chloride ion channels, which causes the disruption of normal neurotransmission
- Selamectin causes paralysis of target parasites, while sarolaner causes target parasite hyperexcitation and death



## Break the flea life cycle to protect your feline patients



TREATING A FLEA INFESTATION REQUIRES THE CONTROL OF MULTIPLE LIFE STAGES

\**I. ricinus*.  
†5 weeks for *I. ricinus* and *I. hexagonus*, 4 weeks for *D. reticulatus* and *R. sanguineus*.

# STRONGHOLD® PLUS

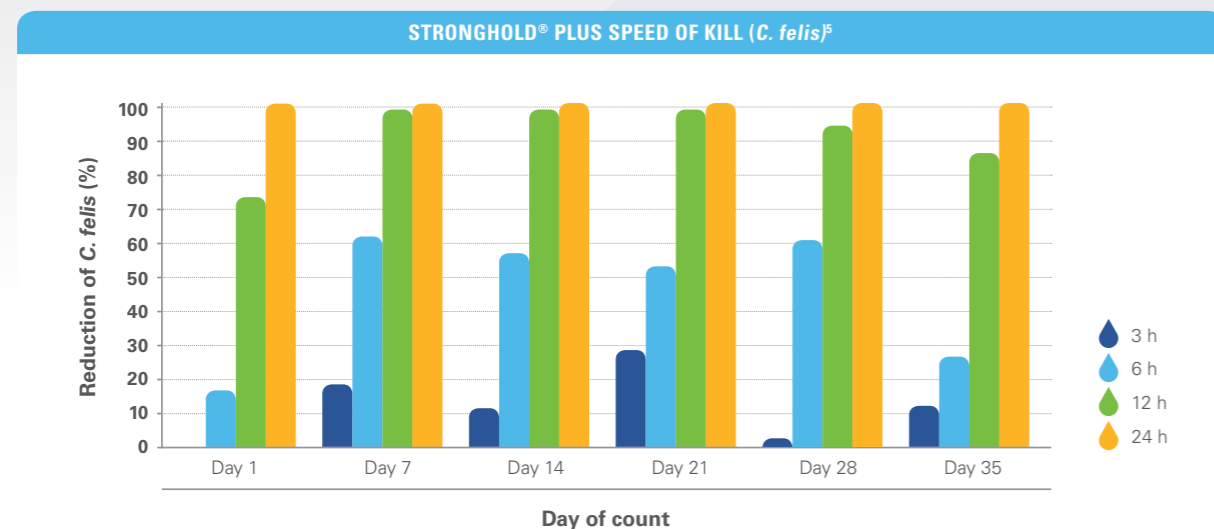
offers comprehensive flea protection beyond the monthly dosing period

# STRONGHOLD® PLUS

provides long term efficacy

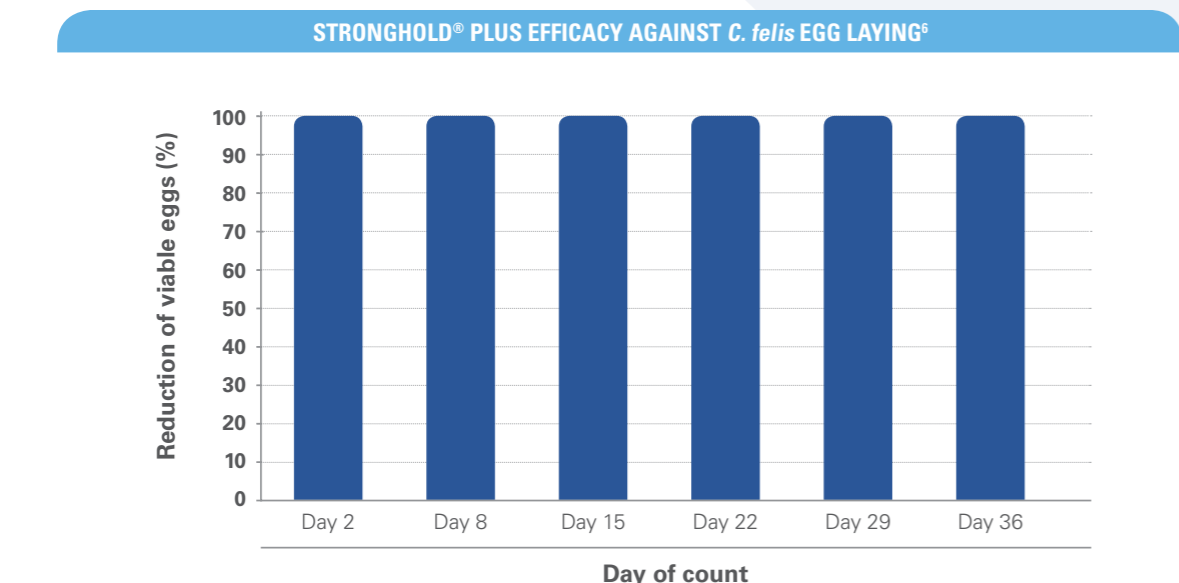
## STRONGHOLD® PLUS provides RAPID and SUSTAINED flea PROTECTION

Following administration, adult fleas on the cat are killed within 24 hours for 5 weeks<sup>1</sup>



**STRONGHOLD® PLUS KILLS FLEAS FAST STARTING FROM 6 HOURS<sup>5</sup>**

STRONGHOLD® PLUS kills fleas fast, before they can lay eggs<sup>6</sup> aiding in the control of environmental flea infestations



## Compare the flea killing activity of STRONGHOLD® PLUS

	STRONGHOLD® PLUS <sup>1</sup> [Selamectin+Sarolaner]	Broadline <sup>11</sup> [Fipronil+(S)-methoprene+ Eprinomectin+Praziquantel]	Bravecto Spot-On for cats <sup>12</sup> [Fluralaner]	Advocate for cats <sup>13</sup> [Imidacloprid+Moxidectin]	Frontline Combo for cats <sup>14</sup> [Fipronil+(S)-methoprene]
Ovicidal and larvicidal activity	✓	✓	X	X	✓
Existing environmental eggs	✓	X	X	X	X
Duration of activity	5 weeks	1 month	12 weeks	4 weeks	4 weeks
Onset of efficacy	24 hours	24 hours	12 hours	Not disclosed	24 hours

Adapted from the label information for the included parasiticides.

STRONGHOLD® PLUS is indicated as part of a treatment strategy for flea allergy dermatitis (FAD)

STRONGHOLD® PLUS treatment improved the clinical signs of FAD, reducing the number of cats with alopecia from self-trauma by 50% after one month and 92% after two months<sup>7</sup>

Systemic action of STRONGHOLD® PLUS significantly reduces flea blood feeding, minimising flea allergy dermatitis<sup>7,10</sup>

Flea allergy dermatitis (FAD) is the most common skin allergy encountered in small animal veterinary medicine<sup>8</sup>. A female adult flea feeds for approximately 25 minutes<sup>9</sup>. As the adult flea feeds salivary proteins are injected into the animal which can result in a hypersensitivity reaction, FAD

Rapidly reducing total flea numbers and decreasing flea feeding time are the keys to controlling the clinical signs of FAD<sup>10</sup>

In a confinement flea feeding chamber study systemically active insecticide Selamectin was more effective with interfering with flea blood feeding than Imidacloprid and Fipronil<sup>10</sup>

# STRONGHOLD® PLUS

protects inquisitive cats against the common parasites they encounter

# STRONGHOLD® PLUS

protects against 4 prominent species of ticks including *Ixodes hexagonus*, one of the most common ticks found on cats<sup>1,2,3</sup>

## The Unique Lifestyle and Behaviour of Cats



### Cats are inquisitive

- Cats frequently encounter hedgehogs and other small mammals that may be infected with *Ixodes hexagonus* ticks through their hunting and roaming behaviour
- Ixodes hexagonus* was found to be the most common tick affecting cats in urban environments<sup>3</sup>

## Cats roam and frequent many different environments



### Meet Roxy

A typical female neutered domestic shorthaired cat, she has access to outdoors



## Cats closely interact with family members

- Cats often have unrestricted access to both indoor and outdoor environments
- Cats act as transport hosts and can transport parasites into the home from outside, posing an increased infection risk to other pets and pet owners (zoonosis)
- Toxocara is the most common zoonotic agent in urban public sites and in rural settlements<sup>15</sup>

## Ticks prevalence in UK<sup>3,16-19</sup>



### *IXODES RICINUS*

**Hosts:** wild and domestic small-large mammals, birds, reptiles, and amphibians  
**Habitat:** grassland, moorland, heathland, and woodland. Found in suburban/urban areas  
**Disease transmission:** Lyme disease and Anaplasmosis



### *IXODES HEXAGONUS*

**Hosts:** hedgehogs, foxes, ferrets, dogs, cats, rodents, and occasionally birds  
**Habitat:** on the host or in the nest. Present in suburban/urban areas  
**Disease transmission:** Lyme disease and Anaplasmosis



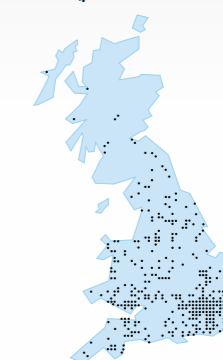
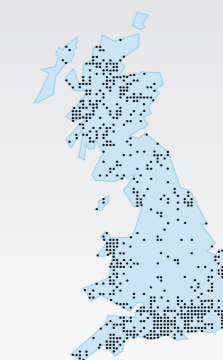
### *RHIPICEPHALUS SANGUINEUS*

**Hosts:** dogs, cats, and foxes, but also recorded on cattle, rabbits, hares, hedgehogs, and squirrels  
**Habitat:** homes, kennels and other sheltered places  
**Disease transmission:** Ehrlichia canis



### *DERMACENTOR RETICULATUS*

**Hosts:** domestic and wild animals, e.g. dogs, horses, cattle, foxes, hares, and hedgehogs  
**Habitat:** grasslands, pastures, and woodlands  
**Disease transmission:** Babesiosis



### Prevalence of two common ticks found on cats in the UK<sup>3</sup>:

<i>Ixodes ricinus</i>	57.1%
<i>Ixodes hexagonus</i>	41.4%



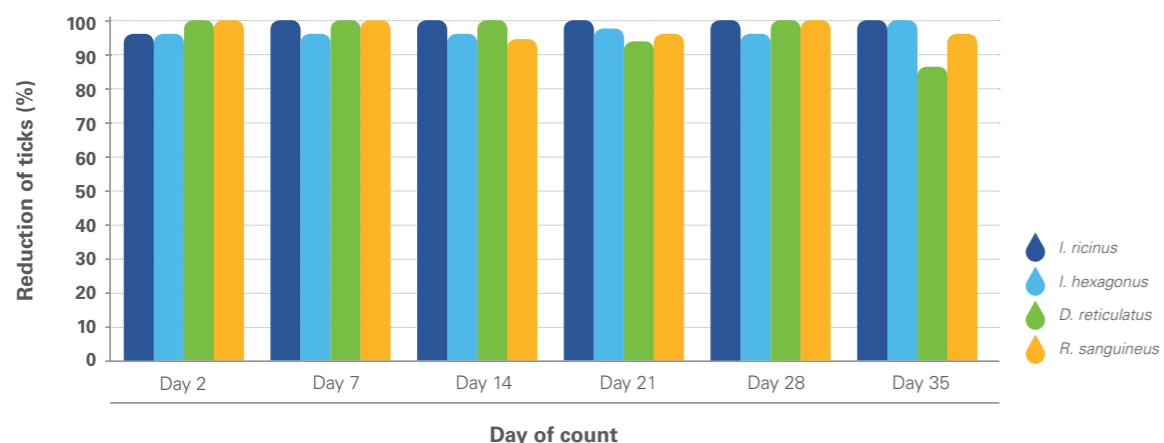
# STRONGHOLD® PLUS

protects against 4 prominent species of feline ticks including *Ixodes hexagonus*, the most common tick affecting cats in the urban environment<sup>1,2,3</sup>

# STRONGHOLD® PLUS

maintains proven efficacy against GI worms, ear mites, heartworm, lice and helps keep tapeworm under control

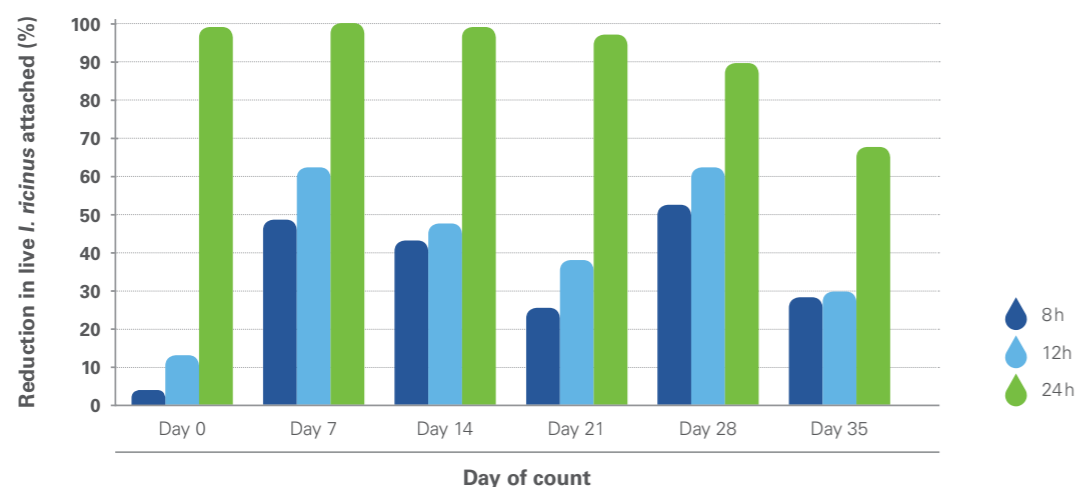
STRONGHOLD® PLUS EFFICACY AGAINST TICKS<sup>7,22</sup>



- STRONGHOLD® PLUS protects against *I. ricinus* and *I. hexagonus* for 5 weeks
- STRONGHOLD® PLUS protects against *D. reticulatus* and *R. sanguineus* for 4 weeks
- STRONGHOLD® PLUS is the only feline product licensed to kill *Ixodes hexagonus*, the most common tick affecting cats in urban environments<sup>1,2,3</sup>

## STRONGHOLD® PLUS persistently kills ticks\* within 24 hours

STRONGHOLD® PLUS SPEED OF KILL (*I. ricinus*)<sup>20</sup>



STRONGHOLD® PLUS KILLSTICKS (*I. RICINUS*) WITHIN 24 HOURS OF ATTACHMENT FOR ONE MONTH

\* *I. ricinus*.

## STRONGHOLD® PLUS has proven efficacy against GI worms

- Selamectin has been shown to be effective for the treatment of adult gastrointestinal nematodes in cats:
  - Roundworms (*Toxocara cati*)
  - Hookworms (*Ancylostoma tubaeforme*)

## STRONGHOLD® PLUS has proven efficacy against biting lice

- Selamectin is active against biting lice infestations (*Felicola subrostratus*)

## STRONGHOLD® PLUS also helps keep tapeworm under control<sup>23</sup>

- The infection of *D. caninum* occurs as a result of the ingestion of infected fleas or lice (intermediate hosts), which carry the larval stages. The prepatent period is approximately 3 weeks and the patent period is several months. Final hosts are dogs, cats, and foxes<sup>23</sup>

Cats ingest the infected fleas while grooming<sup>7,23</sup>

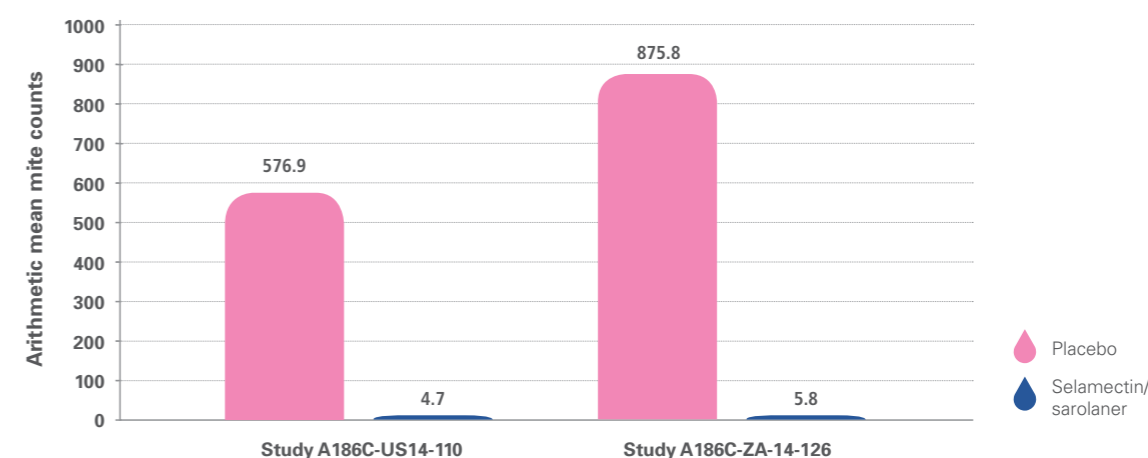
Fleas also act as vectors for a number of other pathogens

*Ctenocephalides felis* is a vector for *Rickettsia felis* and *Bartonella henselae*, the causative bacteria of cat scratch disease

ESCCAP GUIDELINES INDICATE THAT THE RISK OF *D. CANINUM* IS REDUCED BY EFFECTIVELY CONTROLLING FLEAS AND LICE<sup>23</sup>

## STRONGHOLD® PLUS has proven efficacy against ear mites\*

STRONGHOLD® PLUS EFFICACY AGAINST INDUCED INFESTATIONS OF *Otodectes cynotis*<sup>21</sup>



Placebo  
Selamectin/sarolaner

Study A186C-US14-110

Study A186C-ZA-14-126

# STRONGHOLD® PLUS

is indicated in feline patients as young as 8 weeks

# STRONGHOLD® PLUS

is the broad-spectrum endectocide for cats that offers comprehensive flea and tick protection in one convenient, monthly dose

Safety information	
<b>Age</b>	For cats from 8 weeks of age
<b>Weight</b>	For cats from 1.25kg bodyweight
<b>Overdose</b>	Well-tolerated at repeated multiple doses up to 5x the maximum recommended dose* <sup>24,25</sup>
<b>Accidental ingestion</b>	After accidental oral ingestion, transient gastrointestinal effects may occur: <ul style="list-style-type: none"> <li>• Salivation</li> <li>• Soft feces</li> <li>• Emesis</li> <li>• Reduced food consumption</li> </ul>
<b>Adverse reaction</b>	Uncommonly observed adverse events in field safety and efficacy studies: <ul style="list-style-type: none"> <li>• Alopecia</li> <li>• Mild pruritus</li> <li>• Drooling</li> </ul>

## Adverse events occurring after accidental oral ingestion should usually resolve without treatment



### Safety information based on scientific evidence:<sup>25,26,27-32</sup>

- 8 laboratory safety studies in cats:
  - 4 with the combination selamectin/sarolaner
  - 4 with the individual active substances
- 6 laboratory safety studies in non-target species
- 2 field safety studies in client owned cats

\*A single cat, administered 5 times the maximum dose, displayed transient hypersensitivity to touch, piloerection, mydriasis, and mild tremor, which resolved without treatment.



### STRONGHOLD® PLUS utilises the combined action of selamectin + sarolaner

- Increases the duration of protection against fleas
- Broadens the spectrum of protection to 4 prominent species of feline ticks while maintaining proven efficacy against fleas, GI worms, heartworm, ear mites, and lice



### STRONGHOLD® PLUS kills fleas fast, before they can lay eggs

- Kills fleas within 24 hours
- Kills fleas for 5 weeks with no drop in efficacy at the end of the dosing period
- Helps control existing environmental infestations with ovicidal and larvicidal activity
- Use as part of a treatment strategy for flea allergy dermatitis



### STRONGHOLD® PLUS provides fast, sustained treatment of ticks most often found on cats

- Kills *Ixodes ricinus* within 24 hours for one month
- Kills *Ixodes ricinus* and *Ixodes hexagonus* for 5 full weeks
- Kills *Dermacentor reticulatus* and *Rhipicephalus sanguineus* for 4 weeks
- Is the only feline product licensed to kill *Ixodes hexagonus*, the most common tick affecting cats in urban environments<sup>1,3</sup>

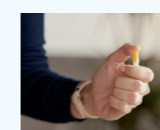


### STRONGHOLD® PLUS is easy to use

- A low-volume dose allows for gentle, complete application
- An easy-to-use clear pipette promotes compliance
- Indicated in kittens from 8 weeks of age

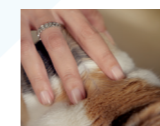
Ease of use promotes compliance as well as efficacy by the delivery and absorption of a complete dose

### STRONGHOLD® PLUS is applied in just three easy steps



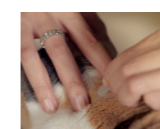
1

While holding the pipette upright, **firmly depress the cap to puncture the applicator seal**, and then **remove the cap**



2

Part the hair just in front of the cat's **shoulder blades** to expose a small area of skin. **Apply the tip of the pipette directly to the skin, without massaging**



3

**Squeeze** the pipette firmly **3-4 times to empty its contents** on one spot. **Avoid contact between the product and your fingers**



# STRONGHOLD® PLUS

is easy to use

A **low-volume** dose allows for gentle, complete application

An **easy-to-use clear pipette**



≤2.5kg



>2.5-5kg



>5-10kg

Dosing table	Pipette (ml)	Selamectin (mg)	Sarolaner (mg)
Cats ≤2.5kg	0.25	15	2.5
Cats >2.5–5kg	0.5	30	5
Cats >5–10kg	1	60	10
Cats >10kg	Appropriate combination of pipettes		

**THERE IS NO NEED TO WEAR GLOVES, HOWEVER, CONTACT WITH THE SKIN SHOULD BE AVOIDED, AND WASHING YOUR HANDS AFTER APPLICATION IS RECOMMENDED\***

**References:** 1. STRONGHOLD® PLUS Summary of Product Characteristics. 2. Ogden NH, *et al. Medical and Veterinary Entomology*, 2000; **14**: 332–338. 3. Professor Richard Wall, Big Tick Project Webinar, Webinar Vet, May 2017. 4. ESCCAP Guidelines 03 Fifth Edition. Control of Ectoparasites in Dogs and Cats. April 2016. 5. Becskei C, *et al. Efficacy and speed of kill of a new spot-on formulation of selamectin plus sarolaner against flea infestations in cats. Veterinary Parasitology* 2017; **238**: S18–S21. 6. Vatta AF, *et al. Efficacy of a new spot-on formulation of selamectin plus sarolaner for cats against adult Ctenocephalides felis, flea egg production and adult flea emergence. Veterinary Parasitology* 2017; **238**: S22–S26. 7. Geurden T, *et al. Efficacy and safety of a new spot-on formulation of selamectin plus sarolaner in the treatment of naturally occurring flea and tick infestations in cats presented as veterinary patients in Europe. Veterinary Parasitology* 2017; **238**: S12–S17. 8. Wilkerson MJ, *et al. 2004. The immunopathogenesis of flea allergy dermatitis in dogs, an experimental study. Veterinary Immunology and Immunopathology*, **99**: 179–192. 9. Rust MK, Advances in the control of Ctenocephalides felis (cat flea) on cats and dogs. TRENDS in Parasitology, 2005; **21**(5). 10. Siak *et al. Flea control in cats. New concepts and the current armory. Journal of Feline Medicine and Surgery*, 2013; **15**: 31–40. 11. Broadline Summary of Product Characteristics. 12. Bravecto Summary of Product Characteristics. 13. Advocate Summary of Product Characteristics. 14. Frontline Combo Summary of Product Characteristics. 15. Gawor, J. *et al. Risk of human toxocarosis in Poland due to Toxocara infections of dogs and cats. Acta Parasitol*, 2014; **60**(1): 99–104. 16. Tick distribution map for Ixodes ricinus, as recorded by the PHE Tick Recording Scheme, and the Biological Records Centre (BRC). Added/updated: 14 October 2013. 17. Tick distribution map for Ixodes hexagonus, as recorded by the PHE Tick Recording Scheme, and the Biological Records Centre (BRC). Added/updated: 14 October 2013. 18. Tick distribution map for Dermacentor reticulatus, as recorded by the HPA Tick Recording Scheme, and the Biological Records Centre (BRC). Added/updated: 14 October 2013. 19. Tick distribution map for Rhipicephalus sanguineus - [https://data.nbn.org.uk/Taxa/NBNSYS0000039964/Grid\\_Map](https://data.nbn.org.uk/Taxa/NBNSYS0000039964/Grid_Map). 20. Becskei C, *et al. Speed of kill of a new spot-on formulation of selamectin plus sarolaner for cats against induced infestations with Ixodes ricinus. Veterinary Parasitology* 2017; **238**: S8–S11. 21. Becskei C, *et al. Efficacy of a new spot-on formulation of selamectin plus sarolaner in the treatment of Otodectes cynotis in cats. Veterinary Parasitology* 2017; **238**: S27–S30. 22. Geurden T, *et al. Efficacy of a new spot-on formulation of selamectin plus sarolaner against four common tick species infesting cats in Europe. Veterinary Parasitology* 2017; **238**: S3–S7. 23. Escapp Guidelines 01 Second Edition. Worm Control in Dogs and Cats. September 2010. 24. Miller WR. A Tolerance Study of a Repeat Topical Dose of PF-06450567 and PF-02636204 in Domestic Cats. Study Number A386N-US-13-083. Data on file. 25. A386W-US-12-025 Non Pivotal Exploratory Safety Study: Tolerant of sarolaner in a dose escalation study, administered topically at 5, 15, 25 and 50mg/kg in combination of a fixed dose of 6mg/kg selamectin in cats. 26. Miller WR. Margin of Safety Study of a Repeat Topical Dose of PF-06450567 and PF-02636204 in Domestic Cats. Study Number A382N-US-15-161. Data on file. 27. Hosako H. An Oral Tolerance Study of PF-06450567 and PF-02636204 in Domestic Cats. Study Number A386N-US-14-099. Data on file. 2015. 28. Krautman MJ, Malpas PB. Exploratory Tolerance of PF-06450567 + Selamectin as a Topical Repeat Dose in Kittens. Study Number A386W-US-13-064. Data on file. 2015. 29. Inskip GA, Malpas PB. Tolerant of Isoxazoline, PF-06450567, in a Dose Escalation Study Administered Topically to Cats. Study Number A386W-US-13-039. Data on file. 2013. 30. Godin CS. Margin of Safety of UK-124,114 in Kittens. Study Number 1482N-60-96-189. Data on file. 1997. 31. Evans EI, Arneson DW, Maidment BW. Oral Safety of UK-124,114 in Cats. Study Number 1482N-60-96-191. Data on file. 1997. 32. McCall JW, Allen DR. Exploratory Safety Evaluation of UK-124,114 in Cats Infected with Adult Dirofilaria immitis. Study Number 5480N-60-94-151. Data on file. 1995.

**stronghold® PLUS**  
selamectin/sarolaner

\*Kills Ixodes ricinus within 24 hours for the full dosing period, kills Ixodes ricinus and Ixodes hexagonus for 5 full weeks, kills Dermacentor reticulatus and Rhipicephalus sanguineus for 4 weeks.

Stronghold Plus spot-on solution for cats contains 60 mg/ml selamectin and 10 mg/ml sarolaner, plus 0.2 mg/ml butylated hydroxytoluene as excipient. Indicated for use in cats with, or at risk from, mixed parasitic infestations by ticks and fleas, lice, mites, gastrointestinal nematodes or heartworm. For information about side effects, precautions, warnings and contra-indications for this product, please refer to the product packaging and package leaflet. Store below 30°C. Do not remove the pipette from the blister until ready to use. Keep out of the sight and reach of children. For animal treatment only.

For further information, please contact Zoetis UK Limited, Walton Oaks, Dorking Road, Walton on the Hill, Surrey, KT20 7NS. Further information is also available from the product SPC. [POM-V](#)

Zoetis Belgium SA, 2nd Floor, Building 10, Cherrywood Business Park, Loughlinstown, Co Dublin, D18 T3Y1. [POM](#)

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