



EUROPEAN MEDICINES AGENCY  
SCIENCE MEDICINES HEALTH

EMA/615923/2013  
EMA/V/C/002555

## Vectra 3D (*dinotefuran / pyriproxyfen / permethrin*)

An overview of Vectra 3D and why it is authorised in the EU

### What is Vectra 3D and what is it used for?

Vectra 3D is a veterinary medicine used on dogs to treat and prevent flea and tick infestations and to repel sand flies, mosquitoes and stable flies. Its actions last for up to a month, and it prevents fleas from hatching and developing for two months. Vectra 3D contains three active substances: dinotefuran, pyriproxyfen and permethrin.

### How is Vectra 3D used?

Vectra 3D can be obtained without a prescription and is available as a spot-on solution in applicators of five different strengths for use on dogs of different weights. The content of one full Vectra 3D applicator is applied directly to the dog's skin, after parting its fur, either in one or more spots on the back, depending on the dog's weight, or in a continuous line along the centre of the back from the base of the tail to the shoulder blades. Treatment can be repeated once a month.

### How does Vectra 3D work?

The active substances in Vectra 3D act as 'ectoparasiticides'. This means that they kill parasites that come into contact with the skin or fur of animals, such as fleas, ticks or flying insects.

Dinotefuran and permethrin are insecticides which kill insects by acting on their nervous system by different mechanisms; permethrin also acts similarly on ticks. Dinotefuran acts on nerve receptors called nicotinic acetylcholine receptors and permethrin interferes with sodium channels on nerves that play a role in transmitting signals; when given together, they reinforce each other's action. Pyriproxyfen is an insect growth regulator which stops the flea life cycle by causing production of infertile eggs as well as blocking development of juvenile flea stages into adults.

### What benefits of Vectra 3D have been shown in studies?

The effectiveness of Vectra 3D against fleas, ticks, mosquitoes and flies was investigated in 24 laboratory studies and in two field studies.

The first field study involved 485 dogs with flea and/or tick infestations. It showed that dogs treated once with Vectra 3D had fleas reduced by 79% over the 4 week study period compared with a reduction of 57% for dogs treated once with another spot-on product containing two other substances

**Official address** Domenico Scarlattilaan 6 • 1083 HS Amsterdam • The Netherlands

**Address for visits and deliveries** Refer to [www.ema.europa.eu/how-to-find-us](http://www.ema.europa.eu/how-to-find-us)

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that control fleas and ticks, fipronil and (s)-methoprene. The dogs treated with Vectra 3D had an average tick reduction of 94% over 4 weeks compared with 97% with the other product.

The second field study involved 278 dogs with flea infestations which were treated three times at monthly intervals either with Vectra 3D or another spot-on product containing fipronil and (s)-methoprene. It showed that Vectra 3D-treated dogs had an average flea count reduction of 95% compared with 97% for the dogs treated with fipronil and (s)-methoprene.

### **What are the risks associated with Vectra 3D?**

The most common side effects with Vectra 3D (which may affect up to 1 in 1000 dogs) are short-lived redness, itching or other signs of discomfort at the application site. These usually disappear within 24 hours after administration. Other side effects with Vectra 3D (which may affect up to 1 in 1000 dogs) are behavioural disorders such as increased activity, barking or signs of anxiety, lethargy (lack of energy), or anorexia (loss of appetite), and nervous system signs such as muscle tremor (shaking).

For a full list of all side-effects reported with Vectra 3D, see the package leaflet.

Vectra 3D must not be used on cats and they must not be allowed to groom dogs recently treated with the medicine, as it may cause harmful effects that could be fatal.

### **What are the precautions for the person who gives the medicine or comes into contact with the animal?**

People applying the medicine should not smoke, eat or drink and should wash their hands thoroughly after handling the product.

If accidental exposure to the eyes occurs, the eyes should be thoroughly rinsed with water and in case of accidental exposure to the skin, the skin should be washed immediately with soap and water.

If skin or eye irritation persists, or if the veterinary medicine is accidentally swallowed, immediate medical advice should be sought and the package leaflet or label shown to the doctor.

People with known hypersensitivity (allergy) to any of the ingredients should avoid contact with the product.

Children must not handle treated dogs for at least four hours after application of the veterinary medicine. Treated dogs should not be permitted to sleep with their owners, especially children, on the day of treatment.

The application site should be allowed to dry before the dog is allowed to come into contact with fabrics or furnishings.

### **Why is Vectra 3D authorised in the EU?**

The European Medicines Agency decided that Vectra 3D's benefits are greater than its risks and it can be authorised for use in the EU.

### **Other information about Vectra 3D**

Vectra 3D received a marketing authorisation valid throughout the EU on 4 December 2013.

Further information on Vectra 3D can be found on the Agency's website:  
[ema.europa.eu/medicines/veterinary/EPAR/vectra-3d](http://ema.europa.eu/medicines/veterinary/EPAR/vectra-3d).

This overview was last updated in March 2019.