

Considerations for Diagnosis & Treatment of Feline Bacterial Keratitis

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In the Literature

Goldreich JE, Franklin-Guild RJ, Ledbetter EC. Feline bacterial keratitis: clinical features, bacterial isolates, and in vitro antimicrobial susceptibility patterns. *Vet Ophthalmol.* 2019;23(1):90-96.

FROM THE PAGE ...

Possible causes of feline keratitis include viral infection (ie, feline herpesvirus-1), eyelid abnormalities (eg, eyelid coloboma, agenesis, entropion, distichiasis, ectopic cilia, tumors), ocular trauma, ocular foreign bodies, corneal sequestra, and bacterial infection. Although bacterial keratitis is less common in cats as compared with other small animals, clinicians should consider the role bacteria can play in keratitis and know how to identify and effectively treat corneal bacterial infections.

Selarid™ (selamectin)

Topical Parasiticide For Dogs and Cats

BRIEF SUMMARY:

See Package Insert for full Prescribing Information

CAUTION:

US Federal law restricts this drug to use by or on the order of a licensed veterinarian.

INDICATIONS:

Selarid is recommended for use in dogs six weeks of age or older and cats eight weeks of age and older for the following parasites and indications:

Dogs:

Selarid kills adult fleas and prevents flea eggs from hatching for one month and is indicated for the prevention and control of flea infestations (*Ctenocephalides felis*), prevention of heartworm disease caused by *Dirofilaria immitis*, and the treatment and control of ear mite (*Otodectes cynotis*) infestations. Selarid also is indicated for the treatment and control of sarcoptic mange (*Sarcoptes scabiei*) and for the control of tick infestations due to *Dermacentor variabilis*.

Cats:

Selarid kills adult fleas and prevents flea eggs from hatching for one month and is indicated for the prevention and control of flea infestations (*Ctenocephalides felis*), prevention of heartworm disease caused by *Dirofilaria immitis*, and the treatment and control of ear mite (*Otodectes cynotis*) infestations. Selarid is also indicated for the treatment and control of roundworm (*Toxocara cati*) and intestinal hookworm (*Ancylostoma tubaeforme*) infections in cats.

WARNINGS:

Not for human use. Keep out of the reach of children.

In humans, Selarid may be irritating to skin and eyes. Reactions such as hives, itching and skin redness have been reported in humans in rare instances.

Individuals with known hypersensitivity to Selarid should use the product with caution or consult a health care professional. Selarid contains isopropyl alcohol and the preservative butylated hydroxytoluene (BHT). Wash hands after use and wash off any product in contact with the skin immediately with soap and water. If contact with eyes occurs, then flush eyes copiously with water. In case of ingestion by a human, contact a physician immediately. The safety data sheet (SDS) provides more detailed occupational safety information. For a copy of the SDS or to report adverse reactions attributable to exposure to this product, call 1-866-591-5777. Flammable – Keep away from heat, sparks, open flames or other sources of ignition.

Do not use in sick, debilitated or underweight animals (see SAFETY).

PRECAUTIONS:

Prior to administration of Selarid, dogs should be tested for existing heartworm infections. At the discretion of the veterinarian, infected dogs should be treated to remove adult heartworms. Selarid is not effective against adult *D. immitis* and, while the number of circulating microfilariae may decrease following treatment, Selarid is not effective for microfilariae clearance.

Hypersensitivity reactions have not been observed in dogs with patent heartworm infections administered three times the recommended dose of selamectin solution. Higher doses were not tested.

ADVERSE REACTIONS:

Pre-approval clinical trials:

Following treatment with selamectin solution, transient localized alopecia with or without inflammation at or near the site of application was observed in approximately 1% of 691 treated cats. Other signs observed rarely ($\leq 0.5\%$ of 1743 treated cats and dogs) included vomiting, loose stool or diarrhea with

or without blood, anorexia, lethargy, salivation, tachypnea, and muscle tremors.

Post-approval experience:

In addition to the aforementioned clinical signs that were reported in pre-approval clinical trials, there have been reports of pruritus, urticaria, erythema, ataxia, fever, and rare reports of death. There have also been rare reports of seizures in dogs (see **WARNINGS**).

SAFETY:

Selamectin solution has been tested safe in over 100 different pure and mixed breeds of healthy dogs and over 15 different pure and mixed breeds of healthy cats, including pregnant and lactating females, breeding males and females, puppies six weeks of age and older, kittens eight weeks of age and older, and avermectin-sensitive collies. A kitten, estimated to be 5–6 weeks old (0.3 kg), died 8 ½ hours after receiving a single treatment of selamectin solution at the recommended dosage. The kitten displayed clinical signs which included muscle spasms, salivation and neurological signs. The kitten was a stray with an unknown history and was malnourished and underweight (see **WARNINGS**).

DOGS: In safety studies, selamectin solution was administered at 1, 3, 5, and 10 times the recommended dose to six-week-old puppies, and no adverse reactions were observed. The safety of selamectin solution administered orally also was tested in case of accidental oral ingestion.

Oral administration of selamectin solution at the recommended topical dose in 5- to 8-month-old beagles did not cause any adverse reactions.

In a pre-clinical study selamectin was dosed orally to ivermectin-sensitive collies. Oral administration of 2.5, 10, and 15 mg/kg in this dose escalating study did not cause any adverse reactions; however, eight hours after receiving 5 mg/kg orally, one avermectin-sensitive collie became ataxic for several hours, but did not show any other adverse reactions after receiving subsequent doses

of 10 and 15 mg/kg orally. In a topical safety study conducted with avermectin-sensitive collies at 1, 3 and 5 times the recommended dose of selamectin solution, salivation was observed in all treatment groups, including the vehicle control. Selamectin solution also was administered at 3 times the recommended dose to heartworm infected dogs, and no adverse effects were observed.

CATS: In safety studies, selamectin solution was applied at 1, 3, 5, and 10 times the recommended dose to six-week-old kittens. No adverse reactions were observed. The safety of selamectin solution administered orally also was tested in case of accidental oral ingestion. Oral administration of the recommended topical dose of selamectin solution to cats caused salivation and intermittent vomiting. Selamectin solution also was applied at 4 times the recommended dose to patent heartworm infected cats, and no adverse reactions were observed.

In well-controlled clinical studies, selamectin solution was used safely in animals receiving other frequently used veterinary products such as vaccines, anthelmintics, antiparasitics, antibiotics, steroids, collars, shampoos and dips.

STORAGE CONDITIONS: Store below 86°F (30°C).

HOW SUPPLIED: Available in seven separate dose strengths for dogs and cats of different weights (see **DOSEAGE**). Selarid for puppies and kittens is available in cartons containing 3 single dose applicators. Selarid for cats and dogs is available in cartons containing 6 single dose applicators. Approved by FDA under ANADA # 200-663

Manufactured by:
Norbrook Laboratories Limited
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Northern Ireland

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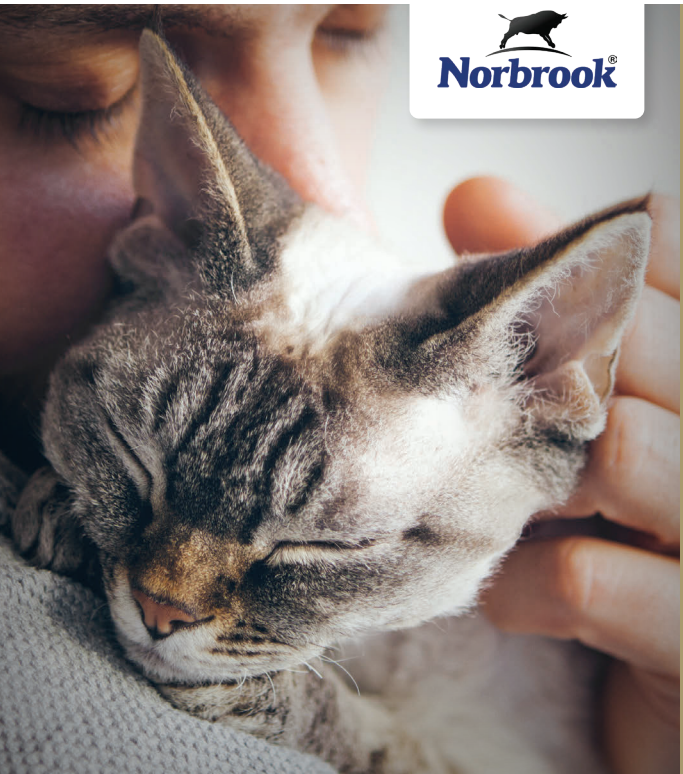
This retrospective study of 81 cats (102 corneal samples) describes clinical characteristics of cats diagnosed with feline keratitis, as well as in vitro susceptibility patterns of corneal bacterial isolates. Most patients were presented with unilateral disease and exhibited blepharospasm and ocular discharge.

Gram-positive bacteria were most often cultured (82 out of 102 samples), with *Staphylococcus* spp isolated from 55% of samples. Most samples (62 out of 81 cats) contained a single bacterial isolate. All isolates were susceptible to ofloxacin; other effective in vitro antibiotics included ciprofloxacin, ticarcillin, gentamicin, and moxifloxacin. Although chloramphenicol and doxycycline were effective in vitro, the authors did not recommend them as first-line therapeutics due to their bacteriostatic activity. Overall success for maintaining vision and globe retention was very good (88%) in this study.

... TO YOUR PATIENTS

Key pearls to put into practice:

- 1** Bacterial keratitis is uncommon in cats. When present, gram-positive bacteria, particularly *Staphylococcus* spp, are the most likely infectious agents.
- 2** First-line antibiotics to treat suspected bacterial keratitis include ofloxacin, ciprofloxacin, ticarcillin, gentamicin, and moxifloxacin.
- 3** Judicial empiric use of antimicrobials is essential to prevent antibacterial resistance. Culture and susceptibility testing is recommended when possible.



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Selarid™ (selamectin)

Now there's an easy and cost-effective way to keep pets protected against flea infestations, heartworm disease and more. Selarid™ (selamectin) Topical Parasiticide from Norbrook® is a monthly treatment for cats and dogs that offers parasite control comparable to the pioneer Revolution® Topical Solution. And with its affordable price, cost is no longer a barrier to year-round patient protection, improved clinic profits and client peace of mind.

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For more information and availability,
call 888-705-0408 or visit Norbrook.com.

IMPORTANT SAFETY INFORMATION: Do not use SELARID on sick, weak or underweight cats and dogs. Use only on cats 8 weeks and older and on dogs 6 weeks and older. Prior to administration, dogs should be tested for heartworms. Side Effects may include digestive upset and temporary hair loss at application site with possible inflammation. In people, SELARID may be irritating to skin and eyes. Wash hands after use. See Brief Summary for full Prescribing Information.

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See page 52 for product information summary.