

NAME OF THE VETERINARY MEDICINAL PRODUCT

Rx Dermoplex®

2. PHARMACEUTICAL PRESENTATION

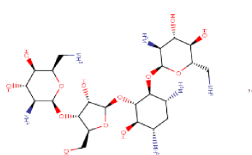
Cream

3. FORMULA

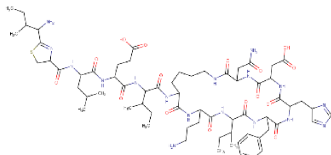
Each 100 g contain:

Neomycin sulfate	0.3 g
Zinc bacitracin	50,000 IU
Dexamethasone acetate	0.05 g
Benzocaine	1 g
Clotrimazole	1 g
Vitamin A palmitate	1,020 IU
Excipient q.s.	100 g

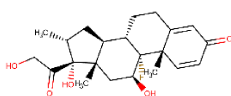
4. STRUCTURAL FORMULA



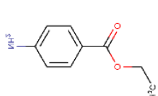
Neomycin sulfate



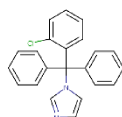
Zinc bacitracin



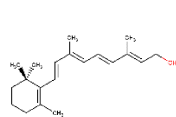
Dexamethasone acetate



Benzocaine



Clotrimazole



Vitamin A

5. THERAPEUTIC INDICATIONS

Antimicrobial, anti-inflammatory, antipruritic, anesthetic, and antifungal, indicated for dermatological conditions such as acute or chronic otitis, lesions requiring itch relief, dermatitis (non-viral and non-tuberculous), ringworm, and eczema. With emollient and healing properties.

6. SPECTRUM

Gram-positive bacteria: *Staphylococcus* sp., *Streptococcus* sp., *Corynebacterium* sp.

Gram-negative bacteria: *Enterobacter* sp., *Escherichia* sp., *Haemophilus* sp., *Klebsiella* sp., *Proteus* sp. and *Pseudomonas* sp.

Fungi: *Microsporum* sp., *Trichophyton* sp., *Candida albicans*, *Malassezia* sp.

(Bennett *et al.*, 2019; Grenne, 2012; Wiebe 2015).

7. SPECIES

Canine and feline.

8. APPLICATION METHOD

Topic.

9. APPLICATION INSTRUCTIONS

Apply a small amount (thin layer) to the affected area after cleaning the area. In case of otitis, apply a small amount of cream to the ear using a cotton swab and massage the base of the ear. The recommended treatment period is 8 to 10 days or as directed by the Veterinarian.

10. MECHANISM OF ACTION

Neomycin:

The action of neomycin is to inhibit bacterial protein synthesis by binding to the 30S ribosomal subunit. It is a bactericidal agent with a broad spectrum of activity, effective against most bacteria except for streptococci and anaerobic bacteria (Papich, 2016).

Zinc bacitracin:

Bacitracin is a complex polypeptide isolated from *Bacillus subtilis* that inhibits the synthesis of peptidoglycan in bacteria by interfering with the enzyme responsible for the movement of cellular components across the membrane. Its spectrum of activity includes gram-positive bacteria and some gram-negative organisms (Merton, 2012).

Dexamethasone:

It has a complex anti-inflammatory effect, primarily through the inhibition of inflammatory cells and the suppression of the expression of inflammatory mediators. The anti-inflammatory and immunosuppressive effects of dexamethasone are approximately 30 times more potent than cortisol (Papich, 2016).

Benzocaine:

Its mechanism of action is to prevent the generation and conduction of nerve impulses. Local anesthetics block

conduction by decreasing or preventing the transient increase in the permeability of excitable membranes to Na⁺, which occurs due to slight depolarization. This action of local anesthetics is due to its direct interaction with voltage-sensitive Na⁺ channels (EMEA, 1997).

Clotrimazole:

Clotrimazole inhibits the biosynthesis of ergosterol, a component of fungal cell membranes, with consequent alteration of permeability and loss of essential intracellular elements. In the case of *C. albicans*, clotrimazole prevents the transformation of blastospores into the invasive mycelial forms. Depending on its concentration, it acts as a fungistatic or fungicide. Clotrimazole has been shown to have a better effect than miconazole against dermatophytes (Moriello *et al.*, 2017; Sumano *et al.*, 2015).

Vitamin A:

Vitamin A is an essential nutrient for the maintenance and repair of epithelial cells, as it leads to increased proliferation and differentiation of keratinocytes. Additionally, it has a photoprotective effect against UV-induced damage, as it interferes with the activation of signals that damage dermal collagen, such as proteolytic enzymes (collagenases, gelatinases, stromelysinases) (Angelo, 2020).

11. PHARMACOKINETICS

Neomycin:

Topical absorption of neomycin is generally considered negligible; however, absorption may increase when the skin is severely inflamed (Wolverton, 2021).

Zinc bacitracin:

There have been no published reports on topical absorption of bacitracin (Wolverton, 2021).

Dexamethasone:

The percutaneous absorption of corticosteroids is reported to be very low (0.04-1.1 ng/cm²/hr). The small amounts that are absorbed are distributed throughout the body, undergo hepatic metabolism, and are eliminated through bile and urine (Trottet, 2004; USPC, 2008).

Benzocaine:

Benzocaine is absorbed in very small amounts and is hydrolyzed by plasma pseudocholinesterases (to a lesser extent by hepatic cholinesterases) to metabolites containing para-aminobenzoic acid. Benzocaine is eliminated mainly by the kidneys as inactive metabolites (González-Rodríguez *et al.*, 2013).

Clotrimazole:

Clotrimazole is absorbed less than 0.5% through the skin. The majority of the absorbed drug undergoes first-pass hepatic metabolism, and its elimination occurs through the feces (Maddison, 2008; Shorr *et al.*, 2007).

Vitamin A:

Percutaneous absorption of retinoids is minimal, so the active ingredient does not reach the systemic circulation to any great extent. A study reported that repeated application of 2 g of a 0.025% retinoid gel (tretinoin) to the face and neck every night for 14 days did not affect its concentration in plasma. Only 1-2% of the tagged dose was excreted in urine and feces, confirming that very low levels of topical retinoids reach systemic circulation (Angelo, 2020).

12. WARNINGS

Do not apply the product on mucous membranes and avoid contact with eyes.

If any allergic reaction is observed, discontinue use of the product and consult your Veterinarian.

Prolonged treatment could lead to the development of resistant microorganisms. Dermoplex® should not be used if there is damage to the tympanic membrane, as neomycin sulfate may be ototoxic (Plumb, 2018; Wolverton, 2021). Cross-sensitivity may exist with substances such as kanamycin, gentamicin and other related antibiotics (aminoglycosides) (Burkhard *et al.*, 2022).

13. ADVERSE REACTIONS

Neomycin:

Sensitization or contact dermatitis may occur (Menezes de Padua *et al.*, 2005).

Zinc bacitracin:

Burning or itching may occur at the application area (Wolverton, 2021).

Dexamethasone:

Adverse effects that have come to be associated with topical corticosteroid application include: dermatitis, hypertrichosis, pigmentation alteration and delayed healing (Hengge, *et al.*, 2006).

Benzocaine:

Its topical application could cause contact dermatitis (González-Rodríguez *et al.*, 2013).

Clotrimazole:

Clotrimazole is generally well tolerated, there are isolated reports of erythema, burning, irritation, stinging, scaling, blistering edema, pruritus and urticaria at the application site (Wolverton, 2021).

Vitamin A:

One adverse effect that may exist with topical vitamin A therapy is "retinoid dermatitis," also known as retinoid irritation or retinoid reaction. Retinoid dermatitis is characterized by erythema, desquamation, dryness and pruritus (Angelo, 2020).

14. OVERDOSAGE

Due to the low or negligible absorption of the active ingredients in the formula through the skin, the likelihood of an overdose is unlikely.

15. DRUG-DRUG INTERACTIONS

The combination of neomycin and bacitracin is known to result in a synergistic effect against *S. aureus* and *P. aeruginosa* (Booth *et al.*, 1994).

Topical use of dexamethasone has been reported to help reduce the likelihood of irritation caused by topical retinoids (Coondoo *et al.*, 2013).

Since clotrimazole is metabolized by the cytochrome P450 system, it could cause pharmacological interactions with agents that are substrates of CYP 3A4 (e.g., vincristine, cyclophosphamide, digoxin, loratadine, etc.). (Bethesda, 2012; Faundez *et al.*, 2011).

16. INTERACTIONS WITH LABORATORY TESTS

No reports were found on modifications of laboratory test results caused by topical application of the active ingredients of the formula.

17. USE DURING GESTATION AND/OR NURSING

The safety of the active ingredients in the formula when applied topically during gestation or lactation has not been reported.

18. PRECAUTIONS

Store in a cool, dry place away from direct sunlight and/or heat.

Keep out of reach of children and pets. Product for exclusive use in Veterinary Medicine.

19. EXPIRATION PERIOD

Expiration Period of the veterinary drug product as packaged for sale: 24 months.

20. HOLDER OF THE REGISTRY

HOLLAND DE MEXICO SA DE CV
Calle 21 Este. No 12, Col. Civac
Jiutepec, Morelos, CP 62578

21. REGISTRATION NUMBER

Q-4196-202

22. PROHIBITION OF SALE, DISTRIBUTION AND/OR USE

Consult your veterinarian.
Prescription required.

23. PRESENTATION

Box containing 60 g bottle (2.11 fl oz).

24. REFERENCES

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- 24.19 Plumb D. Veterinary Drugs Handbook. 6 ed. Blackwell, USA, 2008.
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- 24.23 Wolverton E. Comprehensive Dermatologic Drug Therapy. 4th ed.2021.

CERTIFICATE OF ACCURACY

I, the undersigned, Diana Alicia de Regules Silva, Certified Translator No. P037-2020 SPANISH-ENGLISH-SPANISH, duly sworn and authorized by the Mexican Supreme Court of Justice, as per the Federal Judiciary Council's publication in the Federal Official Gazette on December 11, 2024 (accessible at https://www.dof.gob.mx/2024/CJF/listado_peritos_PJF_2025.pdf page 204):

1. I hereby certify that I have translated a 3-page document in Spanish, titled "**ft Dermoplex**," into a 3-page English document, titled "**ft Dermoplex**", both of which are attached herewith.



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