ABELIA® Zn-Otic

Highly Safe Antipruritic, Antimicrobial, Drying and Healing Otic Solution for Dogs, Cats and Exotic Animals

Data Sheet

Otitis Externa:

Otitis externa is one of the most common pathologies in dogs, estimated to represent up to 15% of cases seen in the clinic every day.

Otitis externa is an inflammation of the external ear canal distal to the tympanic membrane; the ear pinna may or may not be involved. It may be acute or chronic and unilateral or bilateral. It is one of the most common reasons for small animals to be presented to the veterinarian. Clinical signs can include any combination of headshaking, odour, pain on manipulation of the ear, exudate, and erythema. (The Merck Veterinary Manual).

The **primary causes** of otitis externa are those that create disease in a normal ear. They can cause otitis by themselves and can be subtle, often going unrecognized until secondary causes develop. Primary causes alter the ear environment creating ideal conditions for producing secondary infections. The main primary causes of otitis externa are allergies, autoimmune (e.g. pemphigus), and endocrine diseases (e.g. hypothyroidism, hyperadrenocorticism), epithelialization disorders, foreign bodies, glandular disorders, immune-mediated responses (e.g. drug reactions), fungal (e.g. aspergillosis), parasites, virus (e.g. canine distemper), and others (e.g. auricular chondritis, eosinophilic diseases, juvenile cellulitis, proliferating necrotizing otitis in cats).

Secondary causes are those that produce disease in an abnormal or altered ear. These causes are relatively easy to eliminate and include bacteria, fungi, drug reactions and excessively frequent ear cleaning or with unsuitable cleansers and yeast overgrowth *(Malassezia pachydermatis)*.

Factors are disease or pet-related elements that contribute or promote otitis externa by altering the structure, function or physiology of the ear canal. Factors are subdivided into predisposing factors, which are present before the development of the ear disease, and perpetuating factors, which are produced as a result of inflammation. Predisposing factors include poor anatomical formation of the outer ear in dogs, excessive moisture, obstruction of the ear canal, (e.g. polyps, feline apocrine cystadenomatosis) primary otitis media (e.g. primary secretory otitis media, otitis media due to neoplasia or respiratory disease), systemic diseases (e.g. catabolic states) and treatment effects (e.g. alterations in normal microflora, or trauma from unsuitable cleansing). Perpetuating factors include changes in the ear epithelium (e.g. failure of migration), ear canal (e.g. oedema, stenosis, proliferation), glands (e.g. sebaceous hyperplasia), pericartilaginous fibrosis (e.g. calcification) and otitis media (The Merck Veterinary Manual).

Identifying and controlling the primary cause are the main objectives of treatment in most cases of canine otitis externa. However, even if the primary cause is identified and treated, many cases require long-term and recurrent systemic and topical treatment to control the secondary causes. In some atopy cases, the control of secondary infections (especially *Malassezia* spp.) helps to alleviate the clinical symptoms. Most otic preparations are combinations of corticosteroids and antibiotics; the frequent and repeated use of these products is often indicated; however, when these products are used repeatedly for treatment and prevention problems can occur with resistance to antibiotics and side effects to both cutaneous and systemic glucocorticoids. Otic solutions containing mild detergents or disinfectants are valuable in the treatment of otitis externa, and carry fewer potential risks than long-term treatment with antibiotics or glucocorticoids. (C.L. Mendelsohn, C.E. Griffin, W.S. Rosenkrantz, L.D. Brown, M.J Boord).

Composition:

Zinc Gluconate	1%
Boric Acid	1%
L-lysine	1%
Taurine	0.5%

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Features

- Otic product of choice for the preventive maintenance of chronic otitis *Malasezzia*
- Calming action – Relieves pruritus and discomfort
- Stimulates healing of damaged mucous membrane and restores the ear's natural micro-environment
- Powerful drying action of the ear canal
- Helps eliminate bacteria that cause odour
- Very low incidence of post-application stinging
- Non-ototoxic – Safe to use in cases of perforated tympanic membrane
- Does not contain antibiotics or corticoids – Does not produce resistance or dermal or systemic side effects
- Dogs, cats, rabbit, ferrets and other exotic animals
- Does not interfere with allergy tests
- Aqueous, colourless solution – Does not stain surfaces or fabrics in the home

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Properties and Mechanism of Action:

- ABELIA® Zn-Otic is a highly safe, antipruritic, antimicrobial, drying and cicatrising aqueous solution of Boric Acid, Zinc Gluconate, Lysine and Taurine, for the management and prophylaxis of acute and chronic otitis in dogs, cats and exotic animals. ABELIA® Zn-Otic restores the microenvironment in the ear canal, creating an environment that promotes natural healing. Boric Acid dries the ear canal and is an effective antiseptic against the main pathogens that infect the ear, being particularly active against *Malassezia* spp. The complex formed by Zinc Gluconate, Lysine and Taurine provides highly available Zinc to the deepest layers of the lining of the outer ear accelerating regeneration. Zinc has an antipruritic, Healing, antimicrobial and anti-inflammatory action. Lysine and Taurine form a complex that stabilizes the Zinc ion improving its bioavailability.
- **Zinc** is an essential factor in more than 300 enzymatic reactions, many of which are involved in the regeneration of the extracellular matrix, Healings processes, repair of connective tissue, inflammation and cellular growth. Topically administered it has beneficial effects on the healing of wounds, regardless of the systemic Zinc levels of the proband (M.S. Agren,1990). In a study in people, topical Zinc oxide accelerated the healing of diabetic ulcers on legs (H.E. Stromberg, 1984). In pigs and mice, the topical application of Zinc oxide improved the reepithelialisation of partial and full thickness wounds, and was as effective as streptokinase-streptodornase in the elimination of necrotic tissue from pressure sores (M.S. Agren et H.E. Stromberg,1985; M.S. Agren et col, 1999; M. Kietzman,1999). Embedded in an occlusive dressing, Zinc reduces the typical inflammatory reaction from granulation tissue formation (L. Wetter et col, 1986). When applied topically, Zinc has also been shown to have antimicrobial properties; for example, Zinc Gluconate lozenges reduce the duration of cold symptoms and their efficacy increases the longer the lozenge remains in the mouth (B.H. Mc Elroy et S.P. Miller, 2002; R.B. Turner et W.E. Cetnarowski, 2000; S. Marshall, 1998), and an *in vitro* study showed that the Herpes simplex virus was inactivated after treatment with Zinc Gluconate (M. Arens et S. Travis,2000). Like Tris-EDTA and Silver Sulfadiazine, Zinc also has a chelating action on cells (T.J. Mc Carthy et col,1992). Finally, Zinc also reduces the expression of certain inflammatory mediators by keratinocytes exposed to nickel, an allergen responsible for some cases of contact dermatitis (I. Sainte-Marie et col, 1998).
- **Boric Acid** has a drying action, a characteristic that makes it particularly useful when the ear canal is moist. Is has also shown to be effective against *Malassezia* infections. One study concluded that Boric Acid was as effective as topical antibiotics in the treatment of human otitis externa (R.W. Slack, 1987); in another study, 95% of fungal vaginal infections in people were eliminated with vaginal suppositories of Boric Acid (T. Swate et J. Weed,1974). *In vitro* and *in vivo* studies in dogs prove its efficacy against the most common ear pathogens: *Malassezia spp, Staphylococcus intermedius, Pseudomonas aeruginosa*, etc (C.E. Benson, 1998; L.N. Gotthelf et S.E. Young, 1997; R.J. Bassett et al, 2004). The mechanism of action of Boric Acid is not well known; it has been suggested that Boric Acid eliminates epithelial lipids, which are substrates for *Malassezia spp.*, or inactivate a key protein for *Malassezia fungi*.
- **Taurine** has a chelating action on sulphur compounds that produce odour.

Indications:

- To calm pruritus and discomfort associated with otitis.
- Chronic otitis, as long-term maintenance to prevent future recurrences.
- Simple acute otitis, particularly those in which the main agent is *Malassezia.*
- Adjuvant to treatment with antibiotics, antifungals and topical steroids in complicated otitis (e.g. *Pseudomonas*).
- To restore the microenvironment of the ear canal, creating an environment that promotes natural healing.
- Sensitive, irritated or ulcerated ears.
- Ears with perforated tympanic membrane (or suspected perforation).
- Preventive drying of the ear canal (e.g. swimming dogs).
- Odorous ears.

Low dosage – Less daily cost

Available exclusively through veterinarians

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Directions of Use:

- First application:
  1. Clean the ear canal with a suitable cerumenolytic otic cleanser.
  2. Fill the ear canal with ABELIA® Zn-Otic.
  3. Softly massage the base of the ear for a few seconds.
  4. Leave to dry.
- Subsequent applications: depending on the size of the pet, administer from 0.25 ml (5 drops) to 3 ml, twice a day.
- Maintenance: apply 1-2 times a week.

Safety: ABELIA® Zn-Otic a very safe product in dogs, cats, ferrets and other exotic animals. The inclusion of Zinc with the amino-acids L-lysine and Taurine (all three have broad safety margins) makes ABELIA® Zn-Otic effective without the need for extremely low pH or the high concentration of Boric Acid of other otic products; as a result, the incidence of post-application stinging is extremely low, so it is particularly indicated for use when the ear canal is irritated or ulcerated. It does not cause ototoxicity even when the tympanic membrane is ruptured. ABELIA® Zn-Otic does not contain antibiotics or corticoids and so does not build resistance, nor does it carry any risk of dermal or systemic side effects, even when used for prolonged periods. It does not interfere with allergy tests.

Warnings: Keep container tightly closed, in a cool, dry place, protected from direct sunlight and out of the reach of children and animals.

Presentation: 59 ml.

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