Composition:
Boric Acid 2%
Glycolic Acid 2%
Ceramides

Properties and Mechanism of Action:
ABELIA® GlycoZoo is an aqueous otic solution composed of Boric Acid, Glycolic Acid and Ceramides, with antimicrobial, cerumenolytic, keratolytic, lipolytic, astringent, non-irritating and replenishing action for dogs, cats and horses. Its combination of active ingredients, with synergistic effect, makes it particularly effective in the treatment of Malassezia and preventing recurrences. It also improves keratinization disorders such as seborrhea, often associated with these pathologies, and promotes the regeneration of damaged epithelium, accelerating the cell renewal process. This replenishing effect promotes the healing of otitis and hinders relapse. Its Ceramide content helps the epithelium to maintain its integrity, hydration and strengthens the barrier effect. This regenerative action is also related to the promotion of cell renewal and keratinization. The synergistic action of its components is also important for the treatment of infections caused by Malassezia spp. and Staphylococcus intermedius, its antibacterial and antifungal action also reinforces the antimicrobial action of topical treatment.

- **Boric Acid** has an astrigent, effect, a characteristic that makes it particularly useful when the ear canal is wet. It 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 humans were eliminated with Boric Acid vaginal suppositories (T. Swate et J. Weed, 1974). In *vitro* and in *vivo* studies in dogs prove its efficiency against the most common ear pathogens: *Malassezia* spp., *Staphylococcus intermedius*, and *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 may inhibit the metabolic activity of fungi.

- **Glycolic Acid** is an Alpha Hydroxy Acid (AHA) with a very small molecular chain, allowing it to easily penetrate to the deepest layers of the skin. Widely used in human dermatology as an exfoliant and rejuvenator due to its keratolytic and lipolytic effect. Its exfoliating effect promotes the shedding of the more superficial epidermal cells, promoting cell renewal and, as a result, normal keratinization and hydration of the skin. Furthermore, the exfoliating action as it eliminates the layer of dead cells gives the active ingredients better contact with the such and, therefore, greater efficiency. Should the product be taken in combination with antibiotics, such effect will benefit contact with the epithelium and, as a result, enhance its effect. Various studies in people have shown that it significantly improves the condition of skin with pathologies such as acne and hyperpigmentation.

- **Ceramides** are complex sphingolipids found in the stratum corneum of the skin. Their function is to join the cells (corneocytes) together. Their presence helps maintain the barrier effect, repel attacks and prevent microorganisms and allergens from penetrating the skin. They promote the regeneration and repair of the skin and help it recover its natural moisture. Good ceramide levels are essential to maintain the skin in optimal conditions. Skin that is deficient in ceramides may produce symptoms including keratinization and loss of moisture.

Indications:
- Treatment of otitis, particularly those in which the principal agent is Malassezia.
- Long term prevention of recurrent chronic otitis.
- Helps in the treatment of complicated otitis. The cerumenolytic action of ABELIA® GlycoZoo prepares the ear canal to maximize the efficacy of topical treatment. Its antibacterial and antifungal action also reinforce the antimicrobial action of topical treatment.

**Treatment of choice for Malassezia otitis and otitis that occur with keratinization disorders like seborrhea.**

**Features**

**Effective in the treatment and prevention of Malassezia otitis.**
Indicated for the treatment of otitis that presents with keratinization disorders such as seborrhea, due to its lipolytic and keratolytic effect.

**Exfoliant action – Promotes renewal of epithelial cells of the ear canal.**
Contains ceramides, essential for regenerating the epithelium and maintaining its integrity, hydration and protective function.

**Eliminates dead cells giving the active ingredients better contact with the epithelium.**
Very low incidence of post-application stinging.

**Powerful drying action of the ear canal.**
High cerumenolytic power.
ABELIA® GlycoZoo

Antimicrobial, Astringent, Cerumenolytic, Keratolytic, Lipolytic, Non-Irritating and Replenishing Otic Solution for Dogs, Cats and Horses

- Treatment of otic pathologies that occur with seborrhoea and/or keratinization disorders.
- Repair and protection of the epithelium of the ear canal when flaking or other signs of dehydration or irritation occur...
- Ears with perforated tympanic membrane (or suspected perforation).
- Preventive drying of the ear canal (e.g. swimming dogs).
- Malodorous ears.

**Target Species:** Dogs, cats and horses.

**Directions of Use:**

**Treatment:**
- Apply ABELIA® GlycoZoo carefully until the ear canal is full (1 to 5 ml depending on the breed).
- Softly massage the base of the ear for a few seconds.
- Remove excess solution with gauze or a paper towel.
- Repeat every 12-24 hours.
- Ears should be checked by your vet every 7 to 10 days.

**Maintenance/Prevention:** apply 1-2 times a week.

**Safety:** Do not use ABELIA® GlycoZoo if the ear or skin is seriously irritated or ulcerated. Does not cause ototoxicity even when the tympanic membrane is perforated. ABELIA® GlycoZoo does not contain antibiotics or corticoids so does not build up resistance, nor is there any risk of dermic or systemic side effects, even when used over prolonged periods.

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

**Presentation:** 118 ml.

**Bibliography:**

Does not contain antibiotics or corticoids – Does not build up resistance or cause dermic or systemic side effects.

Effective and very safe – Ideal for prolonged treatments.

Non ototoxic – Safe to use in cases of perforated tympanic membrane.

Does not interfere with allergy tests.

Aqueous, colourless solution – Does not stain surfaces or fabrics in the home.

**Dogs, Cats and Horses.**
Ceramides are complex sphingolipids found in the stratum corneum of the skin. Their function is to join repair of the skin and help it recover its natural moisture. Good ceramide levels are essential to maintain hydration of the skin. Furthermore, the exfoliating action as it eliminates the layer of dead cells gives the more superficial epidermal cells, promoting cell renewal and, as a result, normal keratinization and rejuvenator due to its keratolytic and lipolytic effect. Its exfoliating effect promotes the shedding of the epidermis.

Glycolic Acid 2%

- Active ingredient, with synergistic effect, makes it particularly effective in the treatment of atrophic acne scars. In vitro and in vivo studies in dogs prove its efficiency against Staphylococcus intermedius, Pseudomonas aeruginosa and Escherichia coli, which are the most common ear pathogens:

- Cole LX. Diagnosing ear disease: which tests to use and when to use them. Western Veterinary Conference 2013.
- Khunger N, Sarkar R, Jain RK. Tretinoin peels versus glycolic acid peels in the treatment of Melasma in dark-skin-
Indications:
ABELIA® GlycoZoo
Glycolic Acid 2%
Boric Acid 2%

Composition:
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cases. It also improves keratinization disorders such as seborrhoea, effective in the treatment of Malassezia.

The skin in optimal conditions. Skin that is deficient in ceramides may produce symptoms including prevent microorganisms and allergens from penetrating the skin. They promote the regeneration and reinforce the antimicrobial action of topical treatment.

Acid was as effective as topical antibiotics in the treatment of human otitis externa (R.W. Slack, 1987);
P. intermedia, P. aerugi-

Repeat every 12-24 hours.

Dogs, cats and horses.


National Toxicology Program. Photocarcinogenesis study of glycolic acid and salicylic acid (CAS Nos. 79-14-1 and 69-72-7) in SKH-1 mice (simulated solar light and topical application study). Natl Toxicol Program Tech Rep Ser. 2007.
Paterson S. Pseudomonas Otitis. NAVC's Clinician's Brief 2012.
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Non-Irritating and Replenishing Otic Solution for Dogs, Cats and Horses

- Prestes PS, de Oliveira MM, Leonardi GR. Randomized clinical efficacy of superficial peeling with 85% lactic acid versus 70% glycolic acid. An Bras Dermatol. 2013.
- Puri N. Comparative study of 15% TCA peel versus 35% glycolic acid peel for the treatment of melasma. Indian Dermatol Online J. 2012.

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