

ABELIA® TrisEDTA

Antimicrobial, Antibiotic Enhancer, Alkalizing and Non-Irritating
Otic Solution for Dogs and Cats

Data Sheet

Composition:

| | |
|-------------------|--------|
| Tromethamine Base | 0.60 % |
| Tromethamine HCl | 0.35 % |
| EDTA | 0.12 % |
| Benzyl Alcohol | 0.30 % |

pH 8

Properties and Mechanism of Action:

ABELIA® TrisEDTA is an advanced formula, aqueous solution composed of Tromethamine, EDTA and Benzyl Alcohol, slightly alkaline (pH 8) with antimicrobial activity, antibiotic enhancer, alkalizing and non-irritating for dogs and cats. The synergistic effect of its active ingredients encourages the resolution of multiresistant bacterial otitis and prevention of recurrence.

Gram negative bacteria are the most frequently isolated bacteria in canine otitis. These type of bacteria are associated with chronic and persistent otitis, since, due to the characteristics of their cell wall, are often more resistant to antibiotics, antiseptics and disinfectants. *Pseudomonas aeruginosa* is one of the most common gram negative bacteria in these cases due to the low permeability of its cell wall, which makes it more resistant to the majority of antimicrobial agents, including chlorhexidine. Other bacteria like *Proteus* spp, *E. coli* and *Klebsiella* spp are also frequently isolated.

In general, the use of topical antibiotics is recommended when a treatment is established for otitis externa. Systemic antibiotics do not reach sufficiently high concentrations in the ear canal tissue and so are not very effective. Therefore, the use of topical treatment is recommended as first choice.

The choice of an antibiotic may often be complicated by the resistance presented by these microorganisms. The use of advanced treatment options is therefore necessary to resolve the pathology. **ABELIA® TrisEDTA** is the first choice in complex bacterial otitis due to its broad spectrum of action, antibiotic enhancement and safe use in the event of tympanic membrane perforation.

- **EDTA** (Ethylenediaminetetraacetic Acid) has the chemical property of binding with metallic ions forming complexes that precipitate as chelates. In contact with the cell wall of gram negative bacteria (primarily *Pseudomonas aeruginosa*, *Escherichia coli* and *Proteus* spp), EDTA is a chelator of divalent cations such as (Ca⁺⁺ and Mg⁺⁺), which provokes the release of lipopolysaccharides from its structure, leaving it more permeable. This reaction weakens the cell wall of the bacteria allowing antibiotics and antiseptics better penetration and, as a result, increases the sensitivity of these bacteria to antibiotics. In addition, EDTA blocks the so-called efflux mechanisms or efflux pumps in *Pseudomonas* that make them particularly resistant to antibiotics and antiseptics.

The antibacterial action of EDTA is finally complemented by its capacity to inhibit the effects of ulcerative bacterial enzymes.

- **Tromethamine** is an alkaline buffer that enhances the chelating action of EDTA and therefore its antibiotic efficacy. It counteracts the acidity of the exudate produced in otitis externa, which contributes to reducing antibiotic efficacy. Other products with an acid pH also cause a decrease in antibiotic efficacy.

- The association of Tromethamine and EDTA has been shown to present a multitude of advantages in the treatment of otitis. TrisEDTA has been proven to inhibit the growth of *Pseudomonas aeruginosa* *in vitro* (Cole, LK et col.) and *in vivo* (Blue, JL et col.); enhance the action of some antibiotics against



First choice treatment in bacterial
otitis or as antibiotic enhancer.



Features

Broad spectrum antibacterial
without the need for antibiotics
(avoids development of resistance).

Effective against the main bacterial
ear pathogens: *Pseudomonas* and
Proteus (Gram -) and
Streptococcus and *Staphylococcus*
(Gram +).

Benzyl alcohol significantly
increases the antimicrobial activity
of EDTA / Tromethamine.

Proven synergistic action of EDTA /
Tromethamine with antibiotics.

Alkaline pH 8 – Preserves the
activity of antibiotics that are
inactivated in acid environments
(by exudates or acidifying
cleaners).

Improved cleaning action.

Aqueous, pH 8, non-irritating
formula –Treatment of choice in
ulcerated or irritated ears.

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Pseudomonas aeruginosa in vitro (Brown & Richards, 1965 and other authors) and *in vivo* (Farca AM et col.) and reduce the minimum inhibitory concentration (MIC) of enrofloxacin against ciprofloxacin resistant *Pseudomonas aeruginosa* (Gbadamosis S, Gotthelf LN.).

Recently (Buckley LM et col. Vet Dermatology, 2013), TrisEDTA has been seen to significantly increase the efficacy of marbofloxacin and gentamicin against multiresistant strains of *Pseudomonas aeruginosa in vitro*, reducing the minimum bactericidal concentration and minimum inhibitory concentration.

• **Benzyl Alcohol** is a key active ingredient in ABELIA® TrisEDTA. It is usually used as a preservative due to its antiseptic activity against gram positive and gram negative bacteria. It also possesses mild local anaesthetic activity (Minogue SC, Sun DA. Anesth Analg. 2005). The Benzyl Alcohol in ABELIA® TrisEDTA provides the following advantages:

- A double-blind *in vitro* study (Cole LK et col. Am JV et Res. 2006 Jun) showed that it significantly enhances the action of TrisEDTA against gram negative bacteria such as *Proteus spp.*, and broadens its antibacterial spectrum to gram positive bacteria like beta-haemolytic *Streptococcus*.
- As a preservative, it avoids possible contamination of ABELIA® TrisEDTA when used repeatedly in infected ears.
- Its mild anaesthetic action helps control pruritus commonly associated with otitis.

Indications:

- Treatment of otitis in which the main agent is a gram negative bacteria (*Pseudomonas*, *Proteus*...).
- Treatment of otitis in which the main agent is a gram positive bacteria (beta-haemolytic *Streptococcus* and *Staphylococcus*).
- Antibiotic enhancer, mainly Aminoglycosides (gentamicin, neomycin, amikacin, tobramycin...) and Quinolones (marbofloxacin, enrofloxacin, ciprofloxacin...).
- Enhancer of other antibiotics whose action requires alkaline pH.
- Antimicrobial activity even without antibiotic association.
- Long-term prevention of recurrent chronic otitis with a bacterial component.
- Ears with perforated tympanic membrane (or suspected perforation).
- Abscesses or lesions with gram negative and gram positive infections, particularly if treated with Quinolones or Aminoglycosides.

Target Species: Dogs and cats.

Directions of Use:

Treatment:

- Ideally, it is advisable to administer ABELIA® TrisEDTA 15-30 minutes before applying otic antibiotics to enhance its action. Alternatively, it can be applied simultaneously (see Master Formula further on).
- Fill the ear canal: apply 1-5 ml depending on the breed (at least 0.5 to 2 ml is needed to reach the middle ear).
- Softly but firmly massage the base of the ear for several seconds.
- Excess solution or waste in the outer ear can be removed with gauze or a paper towel.
- Do not remove or wash the ABELIA® TrisEDTA solution.
- Apply every 12 to 24 hours for at least 4 weeks. The duration of treatment should be assessed by the clinician in each case.
- The ears should be re-evaluated by your veterinarian every 7 – 10 days. It is advisable to perform control cytologies to assess the success of the treatment and its duration.

Maintenance/ Prevention: apply 1-2 times per week.

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

Effective and very safe – Ideal for prolonged treatments.

No odour or perfume – High acceptance.

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



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Master Formula*:

- Add to the ABELIA® TrisEDTA container:
 - 600 mg of injectable enrofloxacin (e.g.: enro 10%: 6ml). Alternatively add: 400 mg of injectable marbofloxacin, 300 mg of injectable amikacin. These concentrations can be doubled in cases of antibiotic resistance.
 - If there is inflammation, add 8-16 mg of injectable dexametasone (aqueous solutions such as sodium phosphate are safer and dilute better).
 - If otocariasis is diagnosed, add 6 ml of Ivermectin 1%.
- Administer enough product to fill the ear canal, do not remove the solution.
- Establish the frequency and duration of the treatment based on the antibiotic used. It is often advisable to apply the product twice a day for at least 30 days, until healed.
- This formula is effective at room temperature for 3 months**.

*Based on the publications of S. Patterson; C. Griffin; C. Foli; J. Plant, R.A.W. Rosychuk; S.D. White; C.S. Daigley; K.A. Hnilica and others. **Sparks T.A., Kemp D.T., Wooley R.E., Gibbs P.S. Anti-microbial effect o combinations of EDTA- Tris and amikacin or neomycin on the microorganisms associated with otitis externa in dogs. Vet Res Commun.1994;18(4):241-9

Safety: ABELIA® TrisEDTA can be used in dogs and cats of any breed, even when a perforated tympanic membrane is diagnosed or suspected.

Due to its aqueous base and pH8, ABELIA® TrisEDTA is a very mild, non-irritating solution even in sensitive or irritated mucous membrane or epithelial canal.

Warnings: Avoid contact with eyes. Keep container tightly closed, in a fresh, cool place protected from direct sunlight and out of the reach and sight of children and animals.

Presentation: 118 ml.

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