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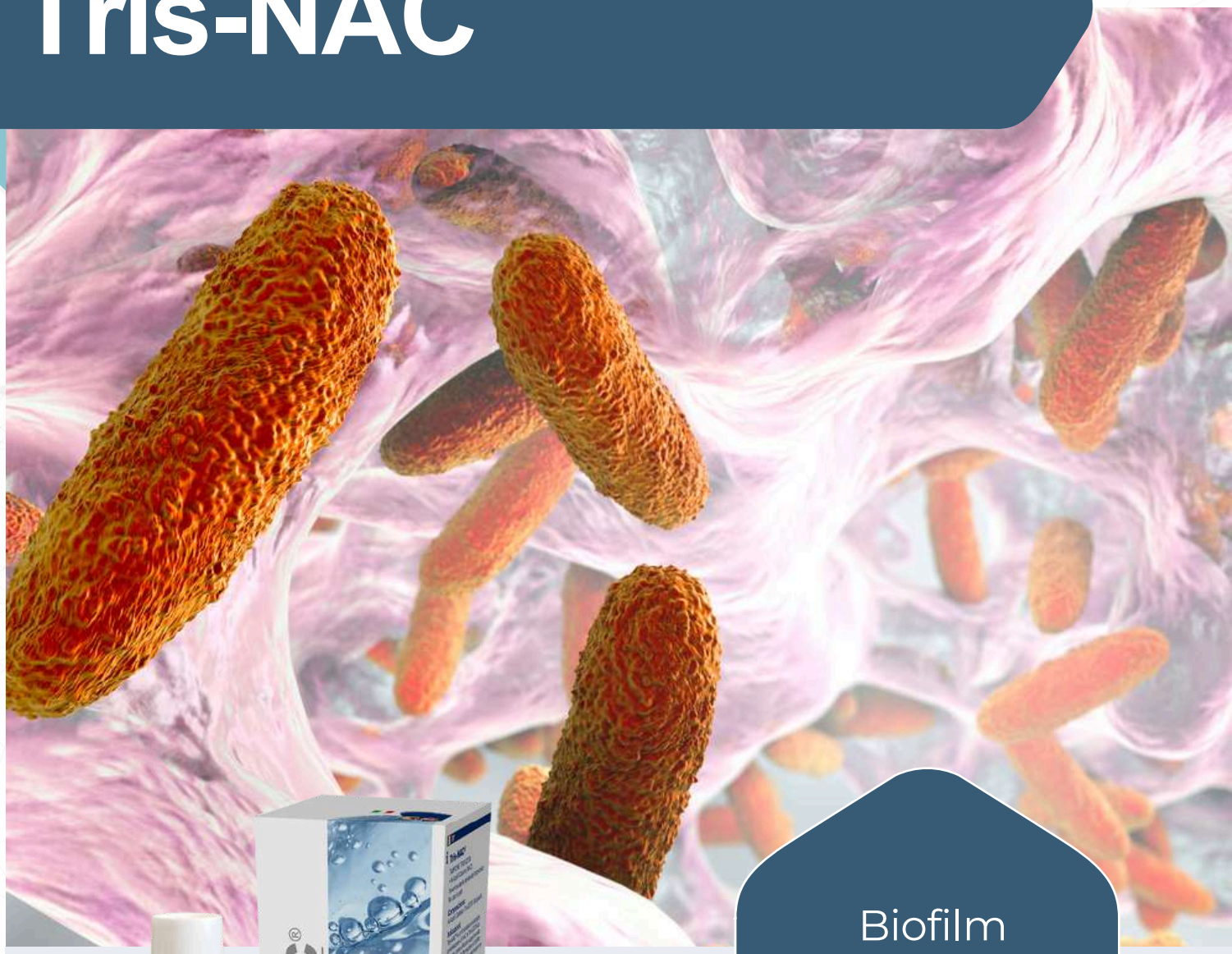
Tris-NAC



Biofilm Busting Ear & Skin Flush

BIOFILM: An Increasing Problem

What is Biofilm

An accumulation of bacteria contained in an extracellular matrix of polymeric substances. This protects the bacteria not only from antibiotics and chemicals, but also from the body's immune system. A biofilm can form on medical equipment as well as on animal tissue.
This biofilm creates resistance to antibiotics; in fact, bacteria in a biofilm can be 100-1000 times more resistant than 'free' bacteria.
Some types of bacteria are capable of producing biofilms, including Staphylococcus pseudintermedius, Pseudomonas aeruginosa (especially in canine otitis, Figs 1 and 2), Proteus Mirabilis and Escherichia coli.
Yeasts (Malassezia spp.) can also produce biofilms, especially in the case of seborrheic dermatitis in dogs. Treatment: topical therapy is the most innovative treatment and involves not only the use of active substances, but also the combination of such substances to bundle their activity.

TRIS-EDTA (ethylenediaminetetraacetic acid):

TRIS-EDTA has a bacterial action against non-growing bacteria within the biofilm (Ciofu et al, 2017); together with Tromethamine (Tris) it damages the cell wall of the bacteria and increases the penetration into the membrane. It is well tolerated and non-ototoxic. Together with chlorhexidine there is an enhanced effect (Guardabassi et al, 2010). Recently, an in vitro study showed that Tris-EDTA, in combination with antibiotics, provides effective support in the treatment of chronic Pseudomonas otitis with potentially involved biofilms (Pye et al, 2014).

NAC (N-acetylcysteine):

N-acetylated derivative of the amino acid cysteine has a mucolytic action; it destroys the production of exopolysaccharides and thus weakens the EPS matrix. It was recently used in eight clinical trials as an adjunctive treatment to destroy or prevent biofilm formation. It turned out to be very effective and safe. A combination of Tris-EDTA and NAC on the skin and in the ear (before applying topical products such as chlorhexidine, antibiotics and synthetic antimicrobial peptides) increases biofilm permeability. This then disintegrates, effectively overcoming resistance to the classical, antibacterial therapeutic approach.

Photo.1
purulent material with biofilm from Pseudomonas canine otitis, collected with a cotton swab

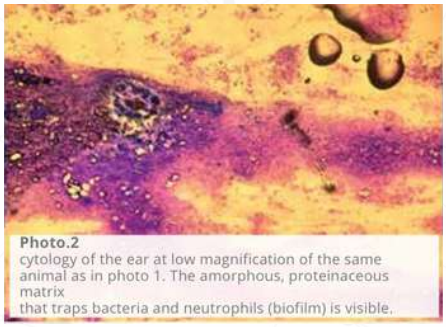


Photo.2
cytology of the ear at low magnification of the same animal as in photo 1. The amorphous, proteinaceous matrix
that traps bacteria and neutrophils (biofilm) is visible.

Tris-NAC®

Tris-NAC is an ear and skin flush containing two highly synergistic and innovative active substances that break down bacterial and fungal biofilms. Tris-EDTA has an antibacterial action and helps prevent the formation of new biofilm, while N-Acetylcysteine breaks down existing biofilm. It can be used before applying medicated drops when bacterial resistance is a concern. Tris-NAC can be used in conjunction with Otodine® and products from the Peptivet range to help manage ear cases. Clean the ear first with Otodine. For use in dogs and cats. Clinically proven and Dermatologist recommended.

Ingredients:

- Tris-EDTA
- N-acetylcysteine

Instructions for use in ears:

- Clean the ears with Otodine
- Using the syringe provided apply the correct volume by size (small dogs / cat 1ml, medium dog 3ml large dog 5ml)
- Massage the base of the ear and allow the product to sit in the ear canal for 5-10 minutes.
- Wipe away any excess with a cotton pad
- Apply the slected antibiotic
- Repeat daily for two weeks before rechecking. Continue for 2 weeks

Instructions for use on the skin:

- Syringe the solution directly onto the skin as required or
- Apply the solution to a gauze and place on to the affected area for 10 minutes
- Apply topicalteatment afterwards

Tris-NAC®

Instruction for mixing the solution:

- Remove lid A from the bottle
- The NAC powder is in cap B. Remove the protective film from the cap
- Screw cap B onto the bottle and press down until you hear a click. This releases theNAC powder into the bottle
- Shake the bottle well to mix the solution
- Product is stable for 50 days once mixed

Clinical Evidence

CLICK HERE

In vitro antimicrobial activity of seven adjuvants against common pathogens associated with canine otitis externa
Wei Yee Chan* , Manouchehr Khazandi*, Elizabeth E. Hickey*, Stephen W. Page†, Darren J. Trott* and Peter B. Hill*
Veterinary Dermatology 2018

CLICK HERE

Tris-NAC ® (Tris-EDTA + N-acetylcysteine) activity against biofilm production, an *in vitro* study
N. MILANESI, G. GHIBAUDO, T. DELLA MURA

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Stability of the N-acetylcysteine (NAC) with Tris-EDTA solution and in combination with dexamethasone sodium phosphate in aqueous solution for 50 days
Milanesi N. et al.

CLICK HERE

Role of the biofilm and therapeutic tools in infective otitis in the dog and cat
G. Ghibaudo

CLICK HERE

Clinical cases managed with the application of Tris NAC
Various

CLICK HERE

In vitro efficacy of N-acetylcysteine in combination with antimicrobial agents against Pseudomonas aeruginosa in canine otitis externa
Youngmin Son, Seulgi Bae*

Clinical Evidence

CLICK HERE

Antibacterial effect of N-acetylcysteine on common canine otitis externa isolates
May, Conklin, Bemis
Veterinary Dermatology 2016

CLICK HERE

Biofilms
Sue Paterson

BONUS OFFERS

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For a special free of charge bonus offer on Tris-NAC and other products in our range click above

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