



URSATEC  
WHEN PRESERVATIVE FREE MATTERS®

Our latest innovation

Effective OTC products that support our microbiome

Product Presentation

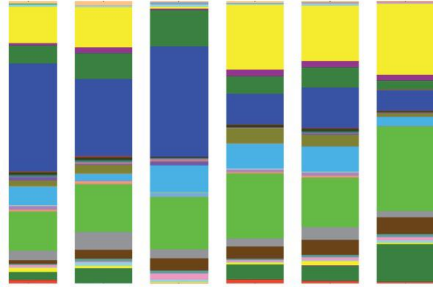
How important is a healthy microbiome for our lives?



# The importance of a healthy microbiome

## A balanced microbiome

Bacterial taxonomy

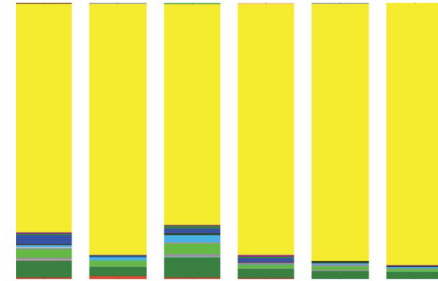


No discomfort



## A dysbalanced microbiome

Bacterial taxonomy



Discomfort

- Atopic disease phenotype (allergies, asthma, eczema, etc.)
- Susceptibility to common cold

- Congested nose
- Nasal discomfort (runny & itchy nose, sneezing, dryness, etc.)
- Cough, hoarseness in mouth & throat
- Itchy, dry and eczema prone skin



# What contributes to a healthy / disturbed microbiome?

## A healthy microbiome

### ➤ “Contact with dirt”

- Children should play outside in the dirt and have contact to animals

### ➤ Healthy & balanced diet

- Whole foods including lots of dietary fiber
- Fresh & natural foods (vegetables, fruits, berries, herbs, spices, etc.)
- Products containing probiotics, lactic acid bacteria and yeast fungi (e. g. kefir, sauerkraut, natural yoghurt, etc.)
- Avoidance of preservatives & artificial ingredients
- Not too fatty diet

## A disturbed microbiome

### ➤ Use / overuse of antibiotics

- Avoid antibiotics whenever possible, they do not only kill the “bad” bacteria but also the “good” ones

### ➤ Use of Preservatives, e. g. in:

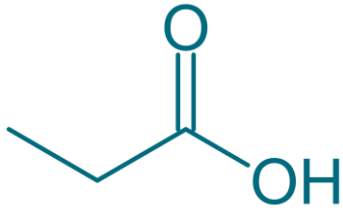
- Food
- Cosmetics and personal care products
- Drugs and OTC products (such as nasal sprays, mouth & throat sprays, ear sprays, dermal sprays, ointments, etc.)

### ➤ Exaggerated hygiene



# Short chain fatty acids (SCFAs) and their role for our immune system

**Propionate** belongs to the most common SCFAs

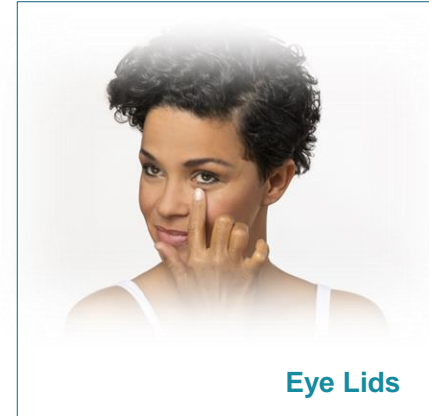
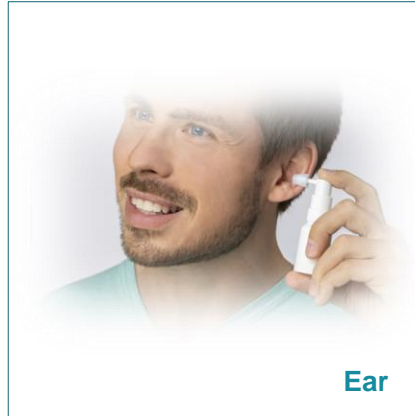
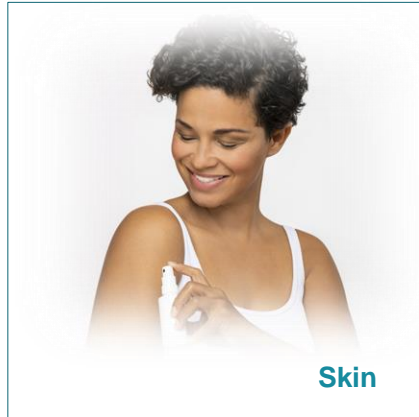


## ➤ SCFAs are:

- produced by bacteria that ferment fiber
- important metabolites in maintaining intestinal balance
- important fuel for intestinal epithelial cells
- known to strengthen the gut function
- known to have an impact on the protection against allergic inflammation in the lung

1. Trompette et al. (2014). Gut microbiota metabolism of dietary fiber influences allergic airway disease and hematopoiesis. *Nature medicine*. 20(2):159-66. Cover Feature.#1 cited Nature Medicine paper 2014. <http://www.bbc.com/news/health-25592214>
2. Trompette et al. (2018). Dietary fiber confers protection against influenza by shaping Ly6c<sup>neg</sup> patrolling monocyte hematopoiesis and CD8<sup>+</sup> T cell metabolism. Submitted to *Immunity*.
3. Huffnagle G.B. (2010). The Microbiota and Allergies/Asthma. *PLoS Pathogens*. Volume 6, Issue 5. e1000549.
4. Front. Immunol., 11 March 2019 | <https://doi.org/10.3389/fimmu.2019.00277> (Short Chain Fatty Acids (SCFAs)-Mediated Gut Epithelial and Immune Regulation and Its Relevance for Inflammatory Bowel Diseases)

# Application fields for Propionate products



# Products ready-to-market



- Nasal Spray with Propionate
- Mouth and Throat Spray with Propionate
- Ear Spray with Propionate
- Dermal Spray with Propionate

## ➤ Sodium Propionate

- Positive effect on the microbiome
- Protection and restoration of respiratory mucosa

## ➤ Locke-Ringer Solution

- Complex saline solution
- Improvement of the ciliary function and mucociliary clearance

Sodium Propionate and Locke-Ringer Solution contribute to an increased osmolality and therefore provide a decongestant effect on mucous membranes in the nose, mouth & throat. Additionally, they have a balancing effect on other epithelial cells and provide comfort for dry, irritated and sensitive skin.



**Improved nasal breathing**  
**Reduction of sore throat**  
**Improved skin hydration & skin barrier function**  
**Reduction of skin redness and irritation**

# Nasal Spray with Propionate

ready to market

Gentle treatment of unspecific nasal discomfort



## Claims



Provides relief in unspecific nasal discomfort and congested nose

Immediate effect (within 5 minutes)

Helps to restore the nasal mucosa and clears it from various pathogens like viruses & bacteria, allergens, pollutants, etc.

Can be used as an accompanying treatment of runny and itchy nose

Decongests the nasal mucosa without the risk of habituation

Efficacy proven in scientific studies

Excellent tolerability

Patent protected

Regulatory Status



Medical Device Class I

Suitable for



For adults and infants above 1 year

Ingredients



Locke-Ringer Solution, Sodium Propionate



# Mouth and Throat Spray with Propionate

ready to market

Gentle treatment of throat discomfort



## Claims



Reduces discomfort and pain of the upper airways in case of laryngitis and/or pharyngitis

Stabilizes the pharyngeal mucosa and thus has positive effects on the cellular function

Increases the mucosal functionality due to slightly hypertonicity

Can be used as an accompanying treatment of sore throat and hoarseness

Moistens oral mucous membranes

Reduces the risk of bacterial and viral infections

Regulatory Status 

Medical Device Class I

Suitable for 

For adults and infants above 1 year

Ingredients



Locke-Ringer Solution, Sodium Propionate

# Ear Spray with Propionate

ready to market

Gentle cleaning and care of the outer ear canal



## Claims



Effective softening of cerumen

Cleansing and care of the external auditory canal

Restitution of the protective function of the outer acoustic meatus

Supports protection against secondary diseases like infections of the external auditory canal

## Regulatory Status



Medical Device Class I

## Suitable for



Children above 12 years

## Ingredients



Locke-Ringer Solution, Sodium Propionate

# Dermal Spray with Propionate

ready to market

Microbiome-friendly spray that keeps your skin rejuvenated with a youthful glow appearance



## Claims

Provides an instant moisturizing soothing action on dry, aging, and sensitive skin

Works to nourish skin and lock-in moisture to restore water and electrolyte balance

Has an immediate cooling action to alleviate acute erythema and pain arising from extensive sunlight exposure

Soothes sensitive skin by improving the skin barrier

Supports the treatment of dermatoses such as atopic dermatitis or other erythema

## Regulatory Status

Cosmetic

## Suitable for

For adults and children above 12 months

## Ingredients

Locke-Ringer Solution, Sodium Propionate



Our innovative Propionate portfolio is a safe and effective treatment for diverse discomforts in the nose, mouth & throat, ear and on the skin and eye lids for the whole family.

# Nasal Spray with Propionate // Customer Insights

I currently have a "runny nose" and am suffering from a cold. I am so glad that I can use the Proponent Nasal Spray. After using the spray, the runny nose stopped immediately. In the past, I tried many other decongestants, and it always took 7 days for the cold to go away. With the Proponent Nasal Spray, the cold was gone in 1-2 days.

**Thomas, 57 years old**

I suffered all my life from allergies. I had to take anti-histamines. Since I have the spray, I manage without anti-histamine. I am so happy!

**Barbara, 48 years old**

Finally, I could use the Proponent Nasal Spray. I had the flu with a completely stuffed nose (no fever). After using the Proponent Nasal Spray, I was able to breathe well through my nose and I could sleep through the night. That's great!

**Mikael, 62 years old**

The throat spray helps me when I have a cough. Then I spray it into my mouth. The taste is good.

**Lea, 10 years old**

The nasal spray is my loyal companion through the hay fever season. I use it for my nose, mouth, and skin. Since I started using the spray, I no longer have any problems with allergies.

**Theres, 36 years old  
(active runner)**

When I realize that I get a cold, and I am taking the spray, I do not get the cold anymore. This is now the case for the past two years. It is wonderful!

**Elisabeth, 75 years old**

It has already helped me because since I use the spray once a day, I no longer take antihistamine tablets and I feel good. It's been 10 days now. So, I hope it will be enough during the intense pollen season - maybe with two puffs per day.

**Marianne, 72 years old**

My two-year-old kept crying and couldn't fall asleep due to having a cold and a congested nose. I gave him the nasal spray. He immediately falls asleep. The most wonderful thing as a parent!

**Nicola, 36 years old**



# Clinical Studies and Pre-Clinical Studies

We know how important clinical studies are to provide claim substantiation and prove of concept.

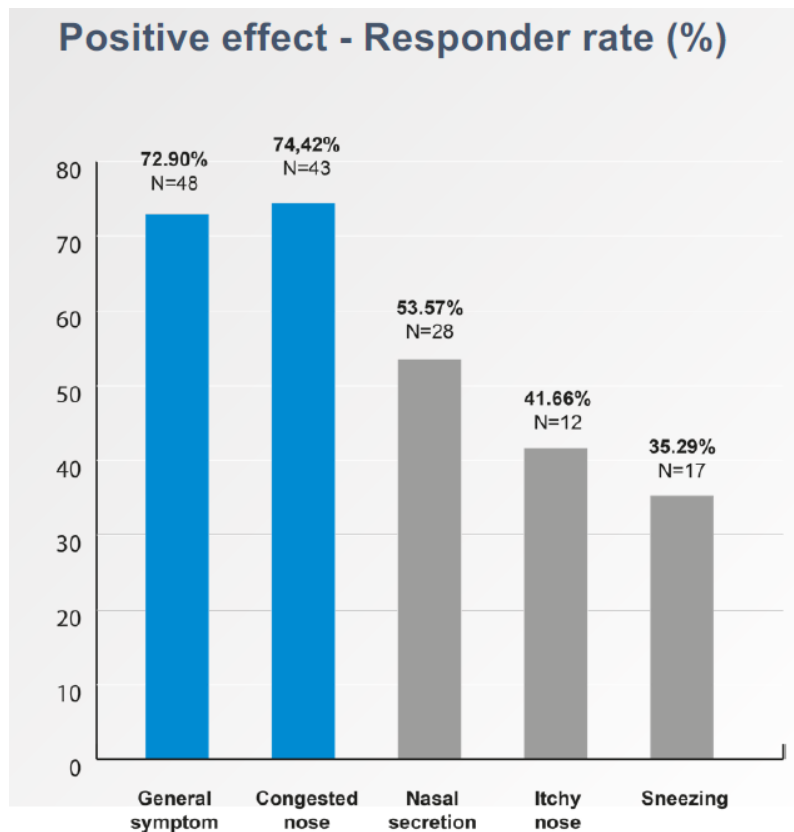


# Nasal Spray with Propionate // Clinical Study Set-Up

Open clinical study to investigate the immediate effect of “Nasal Spray with Propionate” in case of unspecific discomfort in the nose (Open, non-randomized, non-blinded study approved by SwissMedic)

- Conducted in Switzerland
- 48 adult patients (18 – 75 years old)
- **Inclusion criteria:** unspecific nasal discomfort such as congested nose, runny nose, itchy nose, sneezing and/or feeling of a dry nose
- **Primary endpoint:** safety (90% or more of all participants in the study should be showing no side effects based on the adverse event profile)
- **Secondary endpoints:**
  - immediate response rate based on the "change of severity“ of general + individual symptoms of unspecific nasal discomfort following a single administration of “Nasal Spray with Propionate”

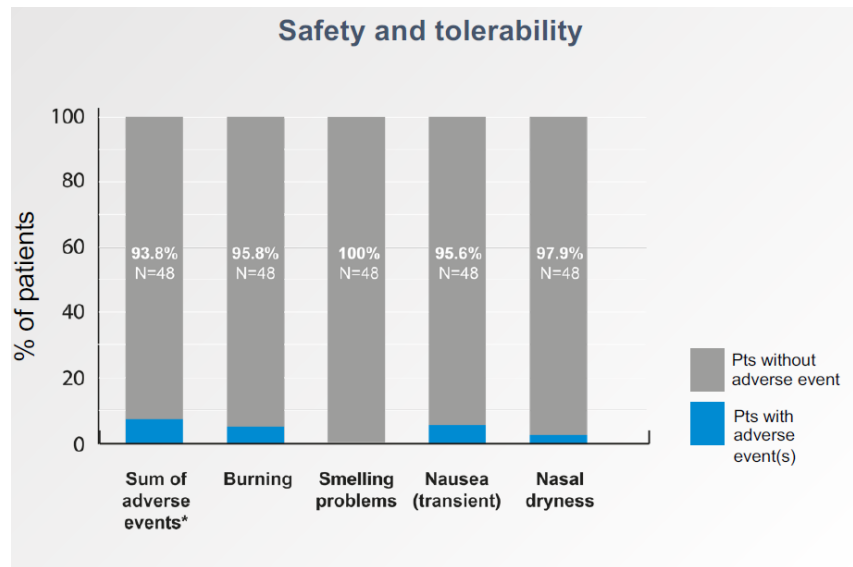
# Nasal Spray with Propionate // Clinical Study - Results



- **72,2% of patients with a positive effect on unspecific nasal discomfort**
- **74,4% of patients with a positive effect on a congested nose**



# Nasal Spray with Propionate // Clinical Study - Results



- 93,8% of patients did not show adverse events
- Primary endpoint of safety was successfully reached
- **“Nasal Spray with Propionate” is demonstrated as safe and well tolerated**

# Nasal Spray with Propionate // Pre-Clinical Study

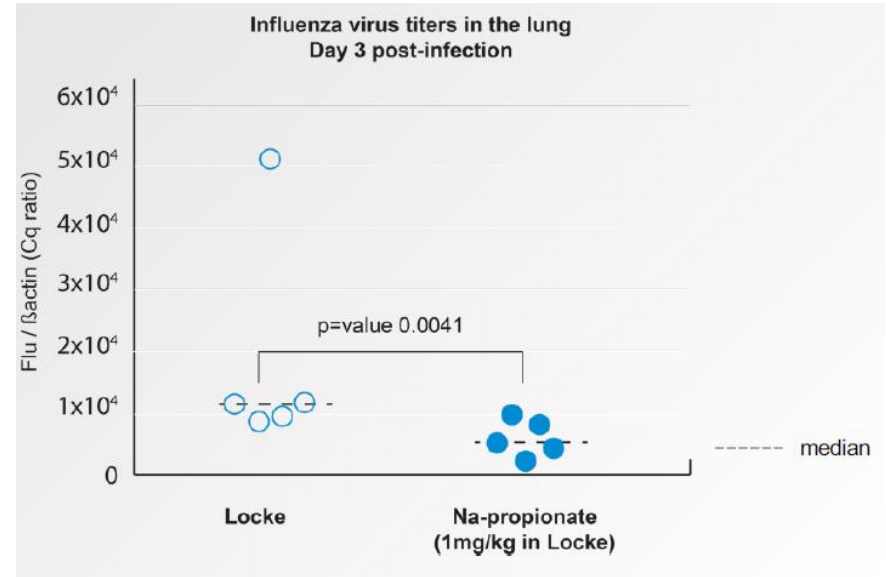
## Pre-Clinical study investigating “Nasal Spray with Propionate” vs. Locke-Ringer solution alone.

### Study design:

Mice (female, 8 week old BALB/c) were intranasally administered with 100 PFU (Plaque Forming Units) of flu virus PR8 in 50ul of PBS on day 0. On days 1, 2, and 3, mice were treated with either Locke-Ringer solution alone, or Locke-Ringer solution that contained sodium propionate sufficient for a dose of 1mg/kg which corresponds to “Nasal Spray with Propionate”.

### Results:

“Nasal Spray with Propionate” was shown to be **statistically more efficient** in supporting the local defense mechanism of nasal mucosa **than a Locke-Ringer Solution alone.**



The figure demonstrates the influenza virus titer in lung tissue normalized to the content of  $\beta$ -actin to guarantee the comparability of the results for the various treatment conditions.

# Nasal Spray with Propionate

## Triple mode of action



1. **Protection and restoration of nasal mucosa** (thanks to Sodium Propionate)
2. **Improvement of the mucociliary clearance** (thanks to Locke-Ringer Solution)
3. **Decongestant effect due to hypertonicity** (thanks to combination of Sodium Propionate & Locke-Ringer Solution)

# Mouth & Throat Spray with Propionate // Pilot Study

**Clinical exploratory study investigated the immediate effect of Proponent “Mouth & Throat Spray with Propionate in case of acute unspecific non-infectious pharyngitis.**

- Volunteers with an unspecific discomfort in the throat, such as sore throat, were included in the exploratory study
- Volunteers administered one pump of the mouth & throat spray
- Volunteers documented their observations related to adverse events and relief of soreness

## **RESULTS → IMMEDIATE RELIEF**

- **“Mouth & Throat Spray with Propionate” showed a pain relief effect at 5 and 30 min after treatment**
- **Relief lasted up to 60 min**
- **No reported adverse events**

# Mouth & Throat Spray with Propionate

## Triple mode of action



1. **Protection and restoration of respiratory mucosa** (thanks to Sodium Propionate)
2. **Improvement of the mucociliary clearance** (thanks to Locke-Ringer Solution)
3. **Decongestant effect due to hypertonicity\*** (thanks to combination of Sodium Propionate & Locke-Ringer Solution)

\* The nasal mucosa and part of the pharynx mucosa are composed by a similar respiratory epithelium. The decongestant effect on the pharynx mucosa is extrapolated from the data on file for the nasal mucosa.



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your attention

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