

SalmoFresh™

Introduction

SalmoFresh™ is an all-natural, non-chemical antimicrobial preparation for controlling the foodborne bacterial pathogen *Salmonella enterica*. The active ingredients of **SalmoFresh™** are naturally occurring lytic bacteriophages that selectively and specifically kill *Salmonella*, including strains belonging to the most common / highly pathogenic serotypes Typhimurium, Enteritidis, Heidelberg, Newport, Hadar, Kentucky, Thompson, Georgia, Agona, Grampian, Senftenberg, Alachua, Infantis, Reading, and Schwarzengrund. **SalmoFresh™** is specifically designed for treating foods that are at high risk for *Salmonella* contamination. Red meat and poultry in particular can be treated prior to grinding for significant reductions in *Salmonella* contamination.

Bacteriophages

Bacteriophages (or phages) are nature's way of destroying bacteria. A bacteriophage is a virus that is harmless to humans, animals, and plants but is very effective in killing bacteria. Specific phages kill specific bacteria. Bacteriophages are *the* most ubiquitous organisms on Earth, with their numbers estimated to be in the $10^{30} - 10^{32}$ range. They are naturally occurring and are commonly found almost everywhere, including in the water we drink and fresh foods we eat.

Bacteriophages provide an all-natural, nontoxic, safe and effective means for significantly reducing or eliminating disease-causing bacteria that are sometimes present in foods or in food processing environments. For example, for direct food applications, the approach of using phage-containing food safety products is based on adding the appropriate concentration of lytic bacteriophages active against the pathogenic bacteria contaminating the foods. If the foods are contaminated with pathogenic bacteria targeted by the bacteriophage preparations, the phages will eliminate or significantly reduce the concentrations of those bacteria in the foods, thus making them safer to eat. For more information, please see our short video: <http://www.youtube.com/intralytix>



Intralytix has developed **SalmoFresh™**, a bacteriophage-based product that targets *Salmonella enterica*. **SalmoFresh™** is *the* choice for eliminating or significantly reducing contamination of food with specific pathogenic bacteria because it:

- Is GRAS for direct application onto poultry, red meat, fish and shellfish, and fresh and processed fruits and vegetables (GRN No. 435).
- Is FSIS-listed as safe and suitable for use in the production of raw and ready-to-eat poultry products, raw and ready-to-eat red meat products as a processing aid with no labeling requirements (FSIS Directive 7120.1).
- Is Health Canada approved for use on fish, shellfish, and fresh and processed fruits and vegetables or on ready-to-eat poultry products prior to slicing and on raw poultry prior to grinding or after grinding (iLONO).
- Is National Food Service of Israel approved as a as a food processing aid for the treatment of fish, shellfish, fresh and processed fruits and vegetables and poultry immediately before or after grinding, and on ready to eat products before slicing (ref: 70275202).
- Is certified both Kosher and Halal.
- Is OMRI listed ("organic").
- Requires no labeling ("clean label").

- Does not contain preservatives.
- Is cost effective and cost competitive.
- Is effective under a wide range of food storage conditions (e.g. 2°C – 42°C).
- Is all natural and not genetically modified (non-GM).
- Does not alter food flavor, aroma, or nutritional value.

Product Information

SalmoFresh™ is a unique and proprietary blend of six individual lytic phages that provide broad protection against pathogenic strains of *Salmonella enterica*. **SalmoFresh™** is a clear-to-opalescent, odorless liquid with a pH of 6.5 - 7.5.

SalmoFresh™ significantly reduces contamination levels of its targeted, susceptible *Salmonella enterica* strains in various foods.

SalmoFresh™ is an all-natural product. It does not alter the general composition, taste, aroma, or color of foods.

SalmoFresh™ is non-corrosive to processing equipment. It requires low or no upfront investment in machinery and is cost-competitive when compared to alternative technologies.

A Material Safety Data Sheet for **SalmoFresh™** is available at www.intralytix.com and can also be requested directly from Intralytix.

Application

SalmoFresh™ is marketed as a concentrated, aqueous, phage preparation that must be stored refrigerated (2-8°C) and then diluted with clean water prior to application. The packaging is labeled with clear instructions for use; bilingual instructions (e.g., English and Spanish) are also available upon request. Usage instructions are laminated and can be easily displayed in the food-processing environment (e.g., attached to the walls in the food processing plant).

An industrial sprayer may be required for large direct food applications. In cases of smaller bench-scale food applications, a handheld sprayer may be appropriate.

For direct food applications, the diluted working solution is typically applied directly on food surfaces by spraying at a concentration of 1 - 10 mL per pound of food product.

Intralytix works closely with all customers to identify the optimal intervention spots and treatment regimens for each individual customer/ production facility and provides an ongoing assistance with product use and applications.

Storage

SalmoFresh™ should be stored refrigerated (at 2-8°C) in the original unopened container. Once opened, the contents should be used within two weeks. The expiration date of **SalmoFresh™** may be sequentially extended in 6 months intervals, if its potency is found to meet the specifications at the end of the expiration date. Intralytix can assist with potency determination if required.

All packaging is recyclable and is specifically designed to withstand the moderately humid and cold environment recommended for storage.