

Prevention of *Listeria* with B-LC-48 SafePro™

Listeria monocytogenes is widely distributed in nature and has been recognized as an important food borne pathogen. Consumption of foodstuffs contaminated with *L. monocytogenes* may lead to listeriosis, a severe clinical condition where *L. monocytogenes* spreads into and infects the central nervous system, and the mortality rate is high. *Listeria monocytogenes* may present a serious health hazard in Ready-To-Eat (RTE) food products such as cold-stored, vacuum or MA-packed meat due to its ability to survive and proliferate at refrigeration temperatures under microaerophilic conditions and its resistance to low water activity and high concentrations of NaCl.

Within the EU, acceptable limits of *L. monocytogenes* in all RTE food products distinguish between products supporting growth and products not supporting growth of *L. monocytogenes*. In the US, there is a 'zero-tolerance' to the presence of *L. monocytogenes* in RTE food products. Hence, legislation both in the EU and US strongly encourages the use of processes or treatments that reduce the number of *L. monocytogenes* in RTE meat products. In the search for new ways to improve food safety and as a response to increasing consumer demands for healthier and additive-free foods, natural methods such as bioprotective cultures are very interesting and promising.

SafePro™ B-LC-48 is a new bioprotective culture that is based on a single-strain psychrotrophic lactic acid bacterium, *Lactobacillus curvatus* LBAcu9720. The strain was isolated from a fermented food product and a patent has been filed on the strain by Chr. Hansen. In numerous application studies on RTE-meat products, B-LC-48 has caused significant and instant reductions in numbers of *L. monocytogenes* when inoculated in concentrations of 10^7 CFU/g. Like traditional food fermentations, known since ancient times, B-LC-48 proliferates in the food products, thus having the ability to become the dominant species of lactic acid bacteria; the listeria inhibitory effect is due to a combination of competitive exclusion and bacteriocin production. In sensorial evaluations, several RTE meat products added B-LC-48 were perceived as more fresh by the end of shelf life. Figure 1 shows just one example of an application study. In this case B-LC-48 was applied onto the surface of a hot-dog type sausage together with a 5-strain cocktail of *L. monocytogenes*.

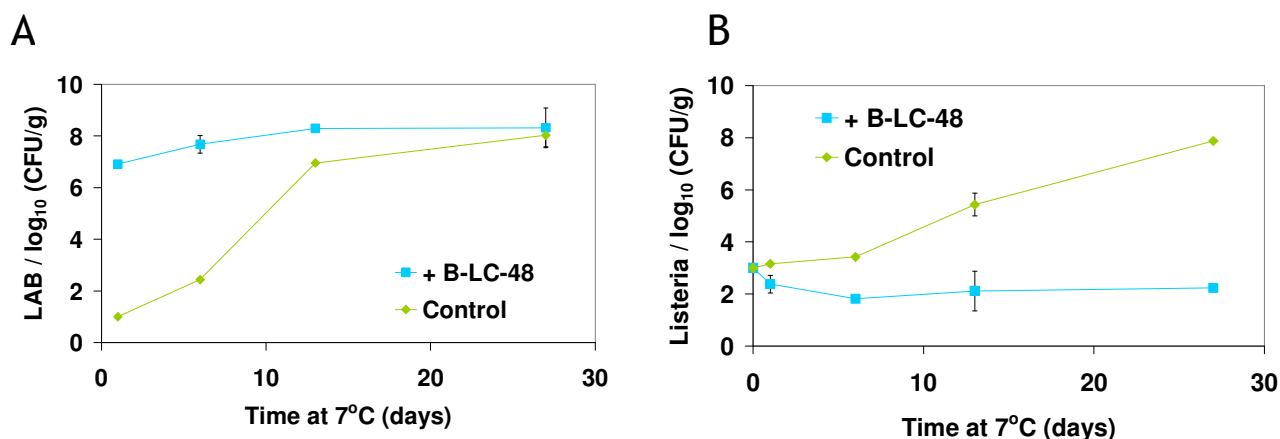


Figure 1. Number of (A) lactic acid bacteria (LAB) or (B) *Listeria monocytogenes* on vacuum packed hot-dog sausages with or without application of the new bioprotective culture in concentrations of 10^7 CFU/g. Analyses on the content of LAB or *L. monocytogenes* were carried out throughout storage by the Danish Meat Research Institute. Data points represent values obtained for duplicate determinations on two separate sausages and the bars indicate the standard deviations.