

LP_{LDL}[®] FOR DAIRY

we are ingredients makers

Lyofast LP_{LDL}[®] for targeted cholesterol reduction

Cardiovascular disease: A global problem

Cardiovascular Disease (CVD) is the number one cause of death globally: more people die annually from CVDs than from any other cause¹.

Cholesterol, particularly LDL cholesterol (LDL-C), and high blood pressure are the major determinants of CVD and it is widely accepted that controlling these and other risk factors significantly reduces the probability of CVD. It is estimated that by controlling risk factors, up to 90% of CVD may be preventable².

The use of probiotics has grown rapidly in the past 10 years largely focused on gut and general health. More recently, an increased understanding of the science

behind how probiotics work has led to growing interest in developing probiotics with demonstrable and specific health benefits, such as cholesterol reduction.

There are a number of possible mechanisms for cholesterol removal by probiotics including: adsorption of cholesterol to cell surfaces, assimilation of cholesterol into cell membranes, direct cholesterol degradation and the deconjugation of bile acids via bile salt hydrolase³.

LP_{LDL}[®] is a strain of *Lactiplantibacillus plantarum*, a species which is present in the human gut microbiota. LP_{LDL}[®] is certified as a non-GMO, FDA GRAS and QPS naturally occurring bacterium.

Lyofast LP_{LDL}[®]: for improved cardiovascular health

L. plantarum LP_{LDL}[®] is a unique, trademarked, and patented probiotic bacterial strain, originally isolated from vegetable juice and used since 1993. Safety, tolerance & efficacy has been thoroughly analyzed and proven in human intervention studies using 4 billion CFU/day.



Stronger together

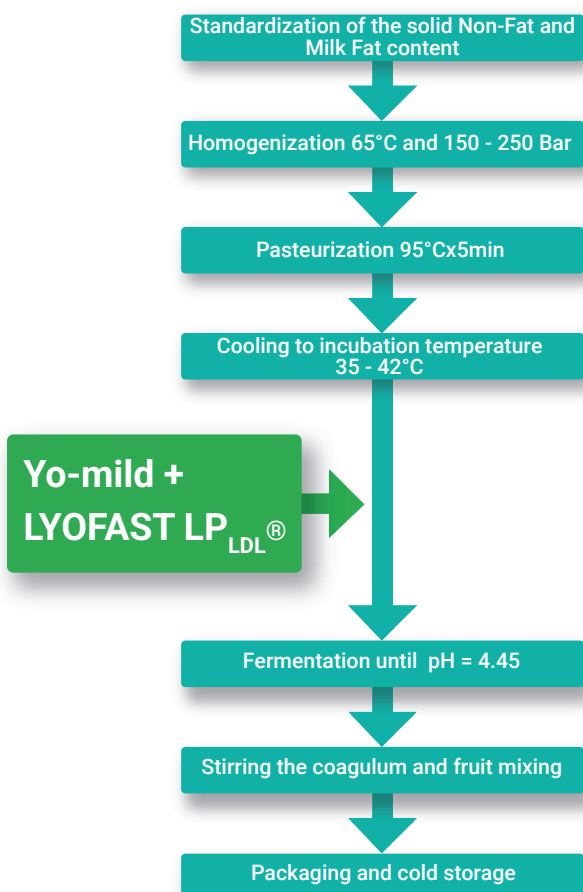
The sweet taste perception of Yo-mild joins our probiotic LP_{LDL}[®] culture for a perfect balance between sensory and beneficial properties.

References

- (1) European Society of Cardiology, Fact Sheet for the Press: <https://www.escardio.org/The-ESC/Press-Office/Fact-sheets>
- (2) Yusuf S, et al. (2004). Lancet. 364: 937
- (3) Begley M, et al. (2006). Appl Environ Microbiol. 72(3):1729-1738



Fermented milk production process



Sacco's experts are at your disposal with assistance, instructions and guidance for application.

References

- (4) Costabile A et al., (2017). PLoS One. 12(12): e0187964
 (5) Derosa G et al. (2020). J Food Nutr Res. 8(6): 273-278

Lyofast LP_{LDL}[®] for fermented milk products

The functionality of fermented milk products increases with the addition of probiotic microorganisms, however there are major factors that affect their viability during the manufacturing and storage process. These include the inoculation level, fermentation time, pH, acidity, post acidification, oxygen content, cold chain management, and time period.

Countering post acidification specifically requires an integrated, focused approach whereby the correct combination of Lyofast LP_{LDL}[®] and Lyofast Yo-mild can be applied to achieve stable microbial counts in addition to excellent organoleptic properties in the final product throughout the shelf-life period under refrigerated conditions.

Mechanism of action of LP_{LDL}[®]

L. plantarum LP_{LDL}[®] cholesterol lowering ability is due to a high Bile Salt Hydrolase (BSH) enzymatic activity, which is necessary both for bacterial survival in the human intestine and for its mechanism of action in reducing blood cholesterol ^{4,5}.

In addition, this activity also contributes to the survival of the strain in the human intestinal tract.

