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Poster title: Application of a Natural Bioactive Glycolipid to Control *Listeria monocytogenes* Biofilms and As Post-Lethality Contaminants in Milk.

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Listeria monocytogenes can form persistent biofilms on food processing surfaces, resulting in cross-contamination of food products such as milk. Natural glycolipids are a promising intervention to control undesirable microbes due to their antimicrobial activity and low toxicity. This study aimed to determine the antimicrobial activity of a natural glycolipid to control *L. monocytogenes* biofilms as well as growth in milk. Sub-inhibitory (SIC), minimum inhibitory (MIC) and bactericidal (MBC) concentrations of the glycolipid product against a 6-strain cocktail of *L. monocytogenes* were first determined. Glycolipid at SIC and $\sim 6 \log$ CFU/mL *L. monocytogenes* were then added to polystyrene and stainless-steel surfaces and incubated for 7 days at 37°C to determine the potential for biofilm inhibition. Glycolipid at 1xMBC, 10xMBC, or 100xMBC was also added to mature biofilms formed on both surfaces for 1 and 4 h at 37°C to determine the potential for the inactivation of biofilm-associated *L. monocytogenes*. Varying concentrations of the glycolipid were also added to commercial UHT whole and skim milk inoculated with $\sim 4 \log$ CFU/mL *L. monocytogenes* and stored at 7°C for 21 days. The SIC, MIC, and MBC of the glycolipid were determined as 1.6, 3.5, and 4.5 mg/L, respectively. The glycolipid significantly reduced biofilm-associated *L. monocytogenes* on both polystyrene and stainless steel at concentrations as low as 45 mg/L. When added to UHT skim milk, a concentration of 1000 mg/L inhibited *L. monocytogenes* growth through 7 days of storage at 7°C, whereas application of 1300 and 1500 mg/L reduced counts to levels below the limit of enumeration at day 21. In contrast, 2000 mg/L were necessary to inhibit growth through 7 days in whole milk. Natural glycolipids have the potential as a natural alternative for the removal of biofilms and as an antimicrobial to control *L. monocytogenes* in milk.