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**Research abstract** 

## Control of *Listeria monocytogenes* in Panela Fresh Cheese Using Recombinant Endolysins

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**Abstract:** Phage-encoded endolysins are recently considered as new biocontrol tools to inhibit pathogens in food. In this work *Listeria* phage endolysins, LysZ5 and PlyP100, were cloned and overexpressed in *Escherichia coli* and their antimicrobial activities against *L. monocytogenes* were evaluated in Panela fresh cheese. Lytic activity of purified endolysins tested against *L. innocua* was 15.7 U/mg protein for LysZ5, and 13.7 U/mg protein for PlyP100. Both endolysins showed lytic activity against the six strains of *Listeria* tested. At concentrations tested, the addition of LysZ5 (19 U/g) and PlyP100 (12 U/g) to Panela fresh cheese reduced viable counts of *L. monocytogenes* in at least 1 Log CFU/g after 21 day storage at 4°C. As far we know, this is the first report of *Listeria* phage endolysins to control pathogens in Panela fresh cheese at refrigeration temperature. Moreover, LysZ5 and PlyP100 could be useful as biocontrol to reduce *Listeria* contaminants in Panela fresh cheese.

Keywords: Biopreservation, Endolysin, Fresh Cheese, Listeria monocytogenes

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