

## PERSISTENCE OF ANTIMICROBIAL PEPTIDE AP-7121 RESIDUES IN MILK

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In dairy farms, bovine mastitis is responsible for significant economic losses. This situation has encouraged the massive use of antimicrobials for mastitis treatment, leading to the existence of milk residues which constitute a problem for Public Health. AP-7121 is an antimicrobial peptide, produced by the probiotic strain *Enterococcus faecalis* CECT7121, with proven *in vivo* harmlessness and *in vitro* activity against bovine mastitis-producers Gram positive strains, showing homogeneous bactericidal efficacy against *Staphylococcus aureus* and *Streptococcus* spp. This study aimed to investigate the persistence of antimicrobial peptide AP-7121 residues in cow milk. To  $n=4$  cow milk samples (LV-01, LV-02, LV-03, LV-04; 100 mL, each one), recently obtained from dairy farms in Tandil District (Province of Buenos Aires, Argentina), it was added AP-7121 (final concentration: 300 µg/mL). Later, after 6, 12, 36, 48, 60 and 72 h of incubation, presence of AP-7121 was assessed in cow milk samples through the diffusion agar assay. Nutrient agar with Tween 20 (1.5% w/v), inoculated at 45 °C with an 18 hour culture of *Micrococcus luteus* ATCC 10240 (susceptible to AP-7121, Minimum Inhibitory Concentration: 0.2 µg/mL) at a 0.2% final concentration, was employed. The suspension was poured into Petri dishes, let until solidification, and 7 mm diameter wells were performed. Aliquots (100 µL) of each cow milk sample, containing AP-7121, were inoculated at different times. For the calculation of AP-7121 milk residues, it was considered a calibration curve previously made ( $\log_{10}$  known AP-7121 concentration against inhibition zone diameter). AP-7121 residues (5 µg/mL), were only detected after 6 h of incubation in milk. AP-7121 not produces contamination of milk with its residues and can be an alternative candidate for the treatment of bovine mastitis.

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