

Cloning and in silico characterization of two signal peptides from *Pediococcus pentosaceus* and their function for the secretion of heterologous protein in *Lactococcus lactis*.

ABSTRACT

Fifty signal peptides of *Pediococcus pentosaceus* were characterized by in silico analysis and, based on the physicochemical analysis, (two potential signal peptides Spk1 and Spk3 were identified). The coding sequences of SP were amplified and fused to the gene coding for green fluorescent protein (GFP) and cloned into *Lactococcus lactis* pNZ8048 and pMG36e vectors, respectively. Western blot analysis indicated that the GFP proteins were secreted using both heterologous SPs. ELISA showed that the secretion efficiency of GFP using Spk1 (0.64 µg/ml) was similar to using Usp45 (0.62 µg/ml) and Spk3 (0.58 µg/ml).

Keyword: Green fluorescent protein; *Lactococcus lactis*; Secretion system; Signal peptides.