

Expression of bovine neutrophil b-defensin BNBD2 gene in *Escherichia coli*

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Background and Aims: Multicellular organisms immune system has less than 100 amino acid peptide. Defensins are one of the largest family of these antimicrobial peptides and because it is applicable as much to the benefit of new generations of antibiotics. The purpose of this study was to evaluate gene expression of beta defensin 2 this is antimicrobial peptides.

Methods: In this study the gene sequences BNBD2 used considering codons in E coli. and in expression vector pET-32a (+) was sub cloned. E.coli strain BL21 by the recombinant vector transfection and protein expression under IPTG induction and SDS-PAGE electrophoresis and Western blot was evaluated.

Results: Recombinant proteins were expressed with IPTG. Molecular weight on gel electrophoresis (KD25) with molecular weight equal to that predicted by theoretical calculations. Techniques western blotting confirmed the presence of this protein.

Conclusions: This study confirmed the sub-cloning and expression BNBD2. The high activity of antimicrobial peptides in vitro in the near future can be effective in treating bacterial infections in vivo.

Keywords: Antimicrobial peptides; Gene expression BNBD2; Protein beta defensin 2