PRECISE LOCALIZATION OF THE EPITOPE OF MAJOR BLV ENVELOPE PROTEIN

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Bovine leukaemia virus (BLV) is the causative agent of enzootic bovine leukosis (2). The major envelope protein gp51 is of prime importance for developing diagnostics as well as potential vaccines. The expression of *env* gene segments in *E. coli* fused to β-galactosidase *(7)* or MS2 polymerase *(8)* allowed us to study the antigenic structure of gp51. Using a β-galactosidase fusion protein, the epitope of a murine monoclonal antibody (MAb14) raised against native viral gp51 (5) was localized between amino acids (aa) 56 and 103 of mature gp51. This monoclonal antibody recognized the oligopeptide between aa 57–67 but not between aa 59–69 (6).

For further epitope mapping a phage fr coat protein (CP) fusion system allowing the production of phage-like particles in *E. coli* (1) was used. First, a fragment of cloned proviral BLV genome HU1 (3) encoding aa 56–103 of mature gp51 was subcloned into N-terminal codons of cloned CP gene. Then the recombinant plasmid was shortened with *Eco*78I and *Asu*II, resulting in a plasmid encoding aa 56–64 of gp51. The construction was verified by DNA sequence analysis. The expression rate was estimated by immunodiffusion *(4)* against rabbit polyclonal anti-frCP serum to amount to 5 % of the total cellular protein. This fusion protein reacted in Western blots with anti-frCP serum as well as with the monoclonal antibody. According to the epitope mapping using oligopeptides *(6)* and our result, the epitope reacting with MAb14 was localized between aa 57 and 64. The described recombinant enables us to investigate the influence of the inserted foreign sequence on the structure and particle forming ability of frCP as well as to study the improved immunogenicity of such exposing antigens.

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