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VIII. ABSTRACT

The efficacy of recombinant DNA, live recombinant BCG and BCG vaccine was tested in a group of calves selected from herds with known negative tuberculosis status. To assist in the evaluation, five groups of 8 calves each, aged approximately 3-6 months were injected subcutaneously with either 1x10^6 CFU of recombinant BCG, Conventional BCG vaccine and intramuscularly with 1000µg of recombinant DNA expressing Rv3881c protein. A control group received PBS via the same route. The immune status was monitored using the Interferon-γ assay, Flowcytometry study of CD4 and CD8 cells and Cytokine IL-4 capture ELISA.

The immune status scores with respect to IFN-γ, IL-4 and T cell subtypes of individual animals were generally much higher in the calves injected with recombinant BCG vaccine than what was experienced with the Conventional BCG, recombinant DNA vaccine and control model and which were statistically significant. It can be concluded that under the prevailing conditions the r-BCG vaccines expressing Mycobacterial protein designated as Rv3881c was able to show higher immune status in calves than Conventional BCG and rDNA vaccine.