

Infectious Bursal disease vaccine design: Identification of the putative molecular target of IBD virus on chicken lymphocytes using immunological and bioinformatic approach Dr. Hari Mohan Saxena

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Infectious Bursal Disease (IBD) is a contagious immunodeficiency disease of chickens causing huge economic losses worldwide. IBD Virus (IBDV) destroys Bursal B cells. However, the receptor of IBDV on B cells is not known. If it is identified, it will lead to an effective vaccine. The present study aimed for identification of the target. Activation of lymphocytes with Lipopolysaccharide very significantly (p<0.005) increased the IBDV binding to cells. The incubation of lymphocytes with Transforming Growth Factor beta very significantly (p<0.005) decreased MHC II expression as well as IBDV binding to cells. Treatment of lymphocytes with Interferon Gamma increased MHC II expression as well as IBDV binding to B cells . Activation of T lymphocytes with Con A resulted in the expression of MHC II molecule on CD3+ T cells. Simultaneous expression of CD3 and IBDV binding on T lymphocytes was observed for the first time. The levels of MHC II and IBDV binding on activated T cells were comparable. Blocking with IBDV resulted in significantly decreased (p < 0.01) staining of MHC II on B cells. Prior incubation with MHC II antibody resulted in decreased IBDV staining on cells. The interesting findings suggest the possibility of MHC II molecule as the putative target for IBDV.

Biography

Professor Hari Mohan Saxena Heads the Veterinary Microbiology Department, GADVASU, Ludhiana. He is a Fellow of World Innovation Foundation, National Academy of Veterinary Sciences and Indian Society for Veterinary Immunology and Biotechnology (ISVIB) and has won four Gold Medals and one Silver Medal in research. He is a Member of Steering Committee of Science Advisory Board, USA and was the President of ISVIB. He is an Editor of the *Journal of Clinical Immunology and Immunopathology Research and the International Journal of Animal and Veterinary Advances.* He is the Principal Investigator of two projects and has filed a patent in diagnostics.