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Evaluation of cellular immune response of four vaccine against caseous lymphadenitis (CLA) by lymphocyte proliferation assay (LPA):

Elgabry E A[1], **Sohier, M Syame**[1], **Selim S A**[2] and **A S Hakim**[1]

[1]Department of Microbiology and Immunology, National Research Center, Dokki, Giza, Egypt

[2]Biotechnology Center for Veterinary Services and Research (BCVSR), Faculty of Veterinary Medicine, Cairo University

All strains of *Corynebacterium pseudotuberculosis* have two virulence factors ,the first is an exotoxin virulence factor called phospholipase D that increasing vascular permeability and enhances dissemination of the bacteria by damaging endothelial cells .The second virulence factor is an external lipid coat that protect the bacteria from hydrolytic enzymes in host phagocytes where the bacteria replicate and release when rupture . The ongoing process of bacterial replication, followed by attraction and inducing an inflammatory response , increasing the vascular permeability and lymph flow ,forms the characteristic abscesses associated with CL .The objective of the present study was directed to perform a comparative study for the protective efficacy of cell mediated immune response by lymphocyte proliferation assay (LPA) for different vaccine formulation to evoke protection against caseous lymphadenitis in sheep . The protective efficacy of four formulated vaccines against *Corynebacterium pseudotuberculosis* biotype 1 was tested on 15 male local sheep bread (Balady) from a herd free from caseous lymphadenitis Disease. Using a virulent strain of *C. pseudotuberculosis* biotype 1 (nitrate negative), locally isolated from severely infected sheep with caseous lymphadenitis. The animals were divided into 5 groups each of 3 animals. each one group was immunized with combined vaccine , the first vaccine composed of Toxoid PLD vaccine ,second vaccine composed of with Toxoid PLD with Bacterine (formaline killed bacteria) vaccine ,third vaccine composed of toxoid PLD plus Covaccine 8 ,fourth vaccine composed of toxoid PLD plus polyvalent clostridial vaccine locally produced and control groups of unvaccinated animals. All groups were challenged by 4'10^6 CFU forming unit per ml of live virulent strain of *Corynebacterium pseudotuberculosis* isolated from local sheep infected with caseous lymphadenitis. Unvaccinated animals showed manifestations of caseous lymphadenitis (CLA) that Cleary observed in naturally diseased animals. The proliferation response of lymphocytes to PLD antigen were measured at 4 weeks after challenge by lymphocyte proliferation assay (LPA)using ELISA Brdu (colorimetric) kit. The results of this work revealed that PLD toxoid could evoke cell mediated immunity measured by lymphocyte proliferation assay showing the highest stimulation index (9.12%).On the other hand combined PLD toxoid and clostridial toxoid vaccine either locally prepared clostridial vaccine (polyvalent clostridial vaccine) or imported one (Covaccine 8)could provide protection against *C. pseudotuberculosis* challenge but less than that provided by vaccination with PLD alone as lymphocyte proliferation activity decreased from SI 9.12 in vaccinated sheep with single PLD toxoid vaccine to SI 5.73 in case of combined vaccine. The present study indicated that the toxoid PLD alone vaccine is most efficient vaccine was provided in animals against CLA.

Fig showed Caseous lymphadenitis lesions in control group animals

Biography

Dr Gabery has his expertise in Advanced Detection of *Staphylococcus aureus*, Enterotoxins in Milk and Staphylococcal Isolates Obtained From Retail Pork Byproducts .detection of of zoonotic *Campylobacter jejuni* in fast meal meat, grill chickens also he has expertise in evaluation and Preparation of Recombinant Vaccines especially against oedematous skin disease in buffalo and Caseous Lymphadenitis (CLA) in sheep ,for the first time at Egypt I can overcome oedematous skin disease in buffalo with recombinant vaccine that give protection for buffalo y about 90% protection that help improving the health of buffalo in Egypt . he also have great experience in detection the virulence gene of *Campylobacter Species*, *S. aureus* and *Corynebacterium pseudotuberculosis*

elgabry73@hotmail.com