



Immune response against vaccines prepared from locally recovered *Listeria monocytogenes*

A Thesis Presented

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ABSTRACT

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In the present study 7 *L.monocytogenes* local isolates recovered from ruminant raw milk (2 cow milk , 2 goat milk , 1 buffalo milk , 1 ewe milk , 1 she camel milk) were showed positive amplification of the 571 bp fragment of primer specific for *prfA* gene followed with sequencing , phylogenetic analysis and genbank accession number . The phylogenetic analysis showed that the cow milk *L.monocytogenes* strain with accession number KP271933 was the ancestor isolate which can use in vaccine preparation . Locally prepared inactivated *L. monocytogenes* vaccine by using different methods of inactivation (formalization , binary inactivation , thermal inactivation , sonication and irradiation) accompanied with different immunomodulatory agents (palm date extract , peppermint extract , thyme extract , mushroom lectins and pidotimoid) showed that the best humoral immune response which expressed as " Antibody titer $\mu\text{g/ml}$ " at the 3rd week post vaccination and the best cellular immune response which expressed as " IL6 Conc. pg/ml " and "IFN-g conc. pg/ml " at the 1st week post vaccination of mice to locally prepared *Listeria monocytogenes* vaccines with irradiated and sonicated vaccine adjuvanted with

mineral oil pidotimoid , Lectins , and thymol , when compared with those adjuvanted with mineral oil palm date and peppermint extract by using ELISA. Antibody titer of irradiated mineral oil pidotimoid , lectins , thymol , palm date and peppermint adjuvanted vaccine were 1911 , 1878 , 1678 , 1534 , and 1453 $\mu\text{g/ml}$ respectively , IL6 Conc. were 31 , 19 , 18 , 16 and 15 pg/ml and the IFN-g conc. were 250 , 60 , 50 , 35 , and 37 pg/ml , also antibody titer of sonicated mineral oil pidotimoid , lectins , thymol , palm date and peppermint adjuvanted vaccine were 1810 , 1666 , 1585 , 1432 , and 1355 $\mu\text{g/ml}$ respectively , IL6 Conc. were 31 , 18 , 15 , 12 and 12 pg/ml respectively , and the IFN-g conc. were 200 , 60 , 45 , 30 and 30 pg/ml respectively. On the other hand, antibody titer of heated mineral oil pidotimoid, lectins, thymol, palm date and peppermint adjuvanted vaccine 1650 , 1520 1502 , 1225 and 1119 $\mu\text{g/ml}$, IL6 Conc. were 15 , 12 , 10 , 9 and 9 pg/ml respectively , and the IFN-g conc. were 150 , 50 , 35 , 25 and 30 pg/ml respectively. However in case of binary mineral oil pidotimoid, lectins, thymol, palm date and peppermint adjuvanted vaccine Antibody titer were 1250 , 1230 , 1205 , 990 and 920 $\mu\text{g/ml}$ respectively , IL6 Conc. were 10, 9 , 8 , 8 and 8 pg/ml respectively and the IFN-g conc. were 130 , 50 , 35 , 25 and 30 pg/ml respectively . While Antibody titer of formalized mineral oil pidotimoid, lectins, thymol, palm date and peppermint adjuvanted vaccine were 950 , 820 , 800 , 790 and 710 $\mu\text{g/ml}$ respectively , IL6 Conc were 9 , 8 , 8 , 8 and 8 pg/ml respectively , and the IFN-g conc. were 130 , 50 , 35 , 30 pg/ml respectively . The results of the ELISA were supported by the challenge test results which recorded that, the irradiated and sonicated vaccine adjuvanted with mineral oil pidotimoid , Lectins , and thymol were the best Protective (efficacy 100%)"when compared with those adjuvanted with mineral oil palm date and peppermint extract or compared with other inactivated methods as (formalin, binary and heating).

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