

Comparison of milk ring test with milk-ELISA for diagnosis of brucellosis

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Brucella contaminated milk is a potential threat to the new born calves and human beings. Udder and supramammary lymph nodes are the primary sites of Brucella multiplication in lactating bovine animals and hence become potential source of contaminants in milk. In response of bacterial multiplication, antibodies are produced by animal and get excreted in the milk. MRT and Milk-ELISA are reliable tests to detect these secreted antibodies. Organized dairy farm of Pantnagar was the target populations for present study. A total 246 milk samples of cattle were screened for Brucella antibodies by MRT and Milk-ELISA. Results showed that, 23.98% and 28.05% cattle population were positive for Brucella antibodies, respectively by Milk-ELISA and MRT. Detection of antibody in cattle respectively by MRT and ELISA in milk showed that, maximum percentage of crossbred animals (28.48% and 33.54%) had antibody against Brucella in comparison to indigenous group of animals (15.91% and 18.18%). Among age groups, 6 to <9 years age groups (33.71% and 38.20%) had maximum reactivity against Brucella followed by ≥ 9 years age groups (20.24% and 22.62%) and 3 to <6 years (16.44% and 21.92), respectively by MRT and Milk-ELISA. Results of this study revealed, brucellosis were significantly prevalent in target population. Statutory mass vaccination programme in susceptible animals are only method of control and eradication of disease since slaughter of cattle are banned in our country.

Biography

Anand Mohan completed his B.V.Sc & A.H. from GADVASU, Ludhiana (Punjab) and M.V.Sc. from GBPUA&T, Pantnagar (Uttarkhand) in Department of Veterinary Epidemiology and Preventive Medicine under ICAR-JRF with distinction. Now he is pursuing Ph.D in Veterinary Bacteriology from IVRI, Izatnagar (U.P.) under UGC-JRF. His two papers have been accepted for publication in Indian journals. He published fifteen abstracts in different National/International Conferences/Symposium. He had been awarded NCC-B certificate in 2006.

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Effect of chitosan based copper nano composite gel on the expression of various cytokines and growth factors involved in the healing of excisional wound in wistar rats

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Wound healing occurs through complex interplay between several cellular and molecular mechanisms, involving the activity of an intricate network of cytokines and growth factors. Copper nanoparticles regulate their modulation due to its high reactivity and small size. Chitosan based copper nanocomposite (CCNC) gel was used topically in the present study to evaluate its time dependent wound healing potential on a 2x2 cm² open excision wound in adult Wistar rats. Experimental design consists of three groups in which acetic acid, chitosan and CCNC were applied topically on these wounds for 14 days and the collection of healing tissue was done on days 3, 7, 11 and 14. The cytokine and growth factor profile analyzed using real time PCR revealed that VEGF mRNA expression was up-regulated significantly by 26 fold on day 3 and TGF- β -1 mRNA expression was significantly up-regulated approximately by 5.9 and 7.4 fold on days 3 and 7 in the CCNC-treated group, establishing its role in facilitating angiogenesis, fibroblast proliferation, and collagen deposition leading to normal architecture of skin. The inflammatory cytokine (TNF- α) and anti-inflammatory cytokine (IL-10) was also studied and results showed that TNF- α mRNA expression was decreased and the IL-10 mRNA expression was increased significantly in the CCNC treated group. Photographic evaluation and wound area measurement also supported the same result. So it can be concluded that incorporation of nanocopper in the chitosan develop an appropriate combination which efficiently enhances the different phases of wound healing by modulating different cytokines and growth factors on different days.

Biography

Anu Gopal completed her B.V.Sc. & A.H degree in 2009 from College of Veterinary and Animal Sciences, Kerala. She received Institute Fellowship from IVRI to pursue post graduation in Veterinary Pharmacology at Deemed University, Indian Veterinary Research Institute, Izatnagar. She is the Member of Kerala Veterinary Council and presently pursuing her post graduation from Deemed University, Indian Veterinary Research Institute, Izatnagar.

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