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RESEARCH ARTICLE

Effect of pineal proteins/peptides of 10-20 kDa on immunomodulation in guineapigs for brucella abortus strain 19 vaccine

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Abstract : There existence of bilateral interactions between pineal gland and immune system. By this bidirectional interaction, pineal gland influences immune functions and immune signals affect pineal function. Microbial pathogens detected by immune system will produce an acute activation of immunocompetent cells. The activated immunocompetent cells modulate the pineal melatonin response, which inturn, will influence the specific immune response along with other melatonin sensitive neuroendocrine mechanisms.In this study the bubaline pineal proteins/peptides fraction with., 200µg/kg b.wt.of 10-20 kDa was studied for its time dependent immunopotentiation effect in guinea pigs for the th $2.6x10^9$cells of live low virulence culture of Brucella abortus strain 19 vaccine at 04:00 hours and 16:00 hours .Blood samples were collected by cardiac puncture from all guinea pigs, on day 0, 7 , 14 and 21 post inoculation of vaccine and serum was separated. The serum agglutination antibody for B.abortus was first confirmed by RBPT and its titres were measured by STAT. The serum agglutination antibody level was the parameter of immunopotentioation in humoral immunity. The bubalinr pineal 10-20 kDa proteins/peptides injected at 04:00 hour, significantly ($P<0.01$) increased the serum antibody levels (STAT) on day 14 and 21 as compared to vaccinated control by 586 66 and 1386.67 I.U./ml and its immunopotentiation efficiency by 122 and 144 per cent, respectively. By this study it is concluded that Injection of bubaline pineal proteins/peptides can modulate the immunity and also injection at 04:00 hours increased the immunopotentiation than at 16:00 hours thereby showing the chronobiotic effect.

Key words : : Bubaline pineal proteins/peptides, 10-20 kDa proteins/peptides, Brucella abortus strain 19 vaccine, Chronobiotic, Immunomodulation,Immunopotentiation

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