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**STUDIES ON INHIBITION OF *YERSINIA ENTEROCOLITICA*  
SETTLING IN THE INTESTINAL TRACT OF MICE**

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The fecal extraction pattern of *Yersinia enterocolitica* 03 strain following intragastrical inoculation was examined on subcutaneously or orally vaccinated mice with killed cells in order to determine the mechanism of inhibiting the organism from settling in the intestinal tracts. Cross-settling inhibition of the organisms was also examined.

The results obtained were as follows.

1) The settling of *Y. enterocolitica* 03 strain was observed in all of the mice vaccinated with killed cells and later inoculated with viable cells of the same strain. These mice had already developed 1:20 to 1:160 of 0 agglutinin titer against the organism in the inoculation.

2) The settling of 03 strain was observed in several mice which had drunk water containing killed cells of the same strain and had been inoculated with the viable organism. Since the settling rate of the experiment was significantly lower than that of the control group ( $P < 0.05$ ), it was assumed that oral administration of killed cells also established immunity in the intestinal tracts of the mice.

3) No settling of 03, 09, or 05B strains was observed in any of the mice inoculated with viable cells of each strain after oral vaccination with viable 03 strain. Conversely, the settling of 03 strain was observed in a few of the mice inoculated with viable cells of the organism after oral vaccination with viable 09 or 05B cells. In both cases, the settling rate of the organism administered later was significantly lower than that of the control group ( $P < 0.05$ ).

4) Mice inoculated with viable cells of *Y. pseudotuberculosis* IVA strain after oral vaccination of 03 strain showed the same fecal excretion pattern as that of the unvaccinated mice. On the other hand, the settling of the 03 strain was low (2/7) in the mice which had been previously vaccinated orally with IVA strain, and the rate was significantly lower than that of control group ( $P < 0.05$ ).