



IgA LEVELS AFTER ORAL VACCINATION OF MICE WITH SALMONELLA

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ABSTRACT

IgA Levels After Oral Vaccination of Mice with Salmonella

In an attempt to determine the immune status of mice following one oral feeding with various Salmonella strains, we have looked for a correlation between serum and/or intestinal IgA levels and protection against a subsequent challenge with a virulent Salmonella strain (S. typhimurium C5).

The measurement of sIgA presents significant problems due, for example, to such intestinal contents as bile and proteolytic enzymes, and to the relatively low levels of sIgA in samples due to the constant movement and elimination of the gut fluid as well as the dilution necessary in the collection of samples for experimental use. Consequently, we examined the ELISA (enzyme-linked immunosorbent assay), in which antibody can be assessed directly against its appropriate antigen in the "solid-phase" and where potentially aberrating components can be washed away. We showed that the ELISA is comparable in sensitivity to the radio-immunoassay without the latter's disadvantages, such as short half-life of principal reagents and hazard in use.

Our results show that those Salmonella strains which persisted in the Peyer's patches of the small intestine of mice following oral immunization afforded excellent protection against a subsequent challenge, and this protection correlated well with relative increases in serum and intestinal sIgA levels.

However, such protection did not correlate with the 'O' somatic antigens of the immunizing and challenging strains. Thus, it seems that the IgA or sIgA level as such is not responsible for the

protection observed, although these levels correlate very well with protection and afford a very good index of the immune status of an animal towards enteric infection.

Finally, this work implies that protection is effected at the cellular level and is dependent upon the persistence of antigen in the Peyer's patches.

STATEMENT

The material in this thesis has not been previously submitted for a degree in any University, and to the best of my knowledge and belief, it contains no material previously published or written by another person except where due reference is made in the text.

P. S. UDOMSANTISUK

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