

Brief Communication

SPECIES SPECIFICITY IN THERMOSTABLE AND ETHANOL
INSOLUBLE TISSUE ANTIGENS *

II. FURTHER IMMUNIZATION OF RABBITS WITH BOVINE
KIDNEY PREPARATION

In a previous experiment, rabbits and goats were immunized with boiled and ethanol precipitated (BE) bovine kidney antigen, and the specificity of the antibodies produced was compared (Andersen 1975). The caprine sera were species specific while the rabbit sera, however, cross-reacted with BE antigens from other ruminant species. Sera from 2 rabbit littermates differed somewhat in that 1 serum seemed to be mainly species specific giving only weak reactions against BE antigens from kidney and spleen from other ruminants, whilst the other serum was more organ specific and reacted equally with homologous and heterologous kidney antigens.

Milgrom *et al.* (1964) did not demonstrate any organ specific BE antigens in preparations from kidney and spleen. The difference in immunologic response of the rabbits in the previous experiment might have been due to a difference in the genetic constitution of the rabbits used. The experiment was therefore repeated by immunizing 4 rabbit littermates which were closely related to the ones used previously (they had the same father and their mothers were littermates). As controls, 6 young rabbits were picked randomly from an outbred colony which was not related to the above mentioned stock.

The procedures for preparation of antigen, immunization and immunological testing were as described previously (Andersen). The experimental period was approx. 12 months.

Sera from 2 of the littermates reacted distinctly against bovine antigens, and gave only slight cross-reactions against other ruminant antigens. Sera from the other 2 littermates gave more distinct cross-reactions against ruminant kidney antigens, especially from sheep and goat. After approx. 8 months the cross-reactions weakened and finally disappeared. The line of

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precipitate against bovine antigens was distinct in all the sera from the 6 control rabbits, although 3 of them showed more distinct reactions with kidney antigens from other ruminants, especially those from sheep and goat. The cross-reactions in sera from the other controls were slight and invisible. Sera from these 6 rabbits also eventually failed to cross-react after nearly 10 months. Thus differing sera were obtained from both groups of rabbits some of which were mainly species specific whilst some gave distinct cross-reactions with other ruminant BE antigens.

These results gave no indication that the previously observed difference in immune response was due to any special genetic factor, but rather that such difference should be expected as a normal variability. After several months of immunization the tendency to cross-reaction disappeared, resulting in more specific sera. The development of species specificity seemed to be dependent on the duration of the immunization procedure.

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REFERENCES

- Andersen, A. E.*: Species specificity in thermostable and ethanol insoluble tissue antigen. I. Immunization of rabbits and goats with bovine antigen. *Acta vet. scand.* 1975, 16, 251—257.
- Milgrom, F., Z. M. Tuggac & E. Witebsky*: Studies on species specificity. *J. Immunol.* 1964, 93, 902—909.

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