Abstracts of "Tuberculosis Research"

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Immunopathological Studies on Antibody Formation

VIII. Studies on the Adjuvant Effect.

Yuko KIKUCHI, Harue OKUYAMA and Kazuo MORIKAWA

Rabbits were injected with BGG antigen with complete, incomplete or atypical mycobacterium adjuvant.

Histopathological changes and follow-up of antigens and antibodies in the injected sites and the regional lymph nodes were examined periodically comparing with the intensity of skin reactions and the precipitin titer of sera.

Adjuvant effect was the highest when complete adjuvant was added to the antigens.

Atypical mycobacrrium adjuvant showed almost the same effect as complete adjuvant.

In these experiments prolonged persistence of antigen obsereved in the injected sites and marked pyroninophilic cell proliferation occurred in the regional lymph nodes.

On the basis of these results the mechanism of adjuvant effects was discussed.

Mechanism of the Development of Delayed-Type Hypersensitivity Reaction

II. Fractionation of the Culture Supernatants of Tuberculous Macrophages Treated with Specific Antigen

Harue OKUYAMA, Kazuo MORIKAWA and Yukō KIKUCHI

A permeability factor was found in the culture supernatant of tuberculous rabbit macrophages previously treated with tuberculin. It provoked a strong erythematous and edematous skin reaction in normal rabbits. It was partially purified by chromatography. The factor was detected immunelectrophoretically in the α-globulin and albumin region. It did not carry a migration inhibitory activity. It provoked histologically a monocytic skin reaction.

This factor is supposed to play an important role in elicitation of tuberculin skin reaction.

Studies on the Reactivity of γM Antibody against HSA in the Farr Test

Tohru OHARA, Takuro KIMURA and Masahide SHIMIZU

1) Mixtures in different proportions of γM- and γG-antibodies taken from rabbits immunized with HSA were assayed for their antigen-binding capacities to HSA in order to know whether or not the competition between both classes of antibodies against HSA has occured. According to the data obtained, only antibodies belonging to γG class were proved to have the capacity to combine with antigen and their ABC titers were not significantly influenced by the co-existing γM antibodies. Thus no competition between γG- and γM-antibodies was observed in the Farr test, contrary to the case of bacteriophage neutralization observed by Turner et al.

2) γM antibody was reduced by 2-mercaptoethanol to expose all the combining sites to the antigen, but each subunit obtained by this procedure showed no antigen-binding capacity. From this fact, it seemed not likely that the non-reactivity of γM antibody with antigen in the Farr test might be due to steric hindrance.

3) As a substitute for the 50 % saturated ammonium sulfate in the original Farr test, anti-γM sheep antisera were used to precipitate the antigen-γM antibody complexes, but the resulting precipitates showed no radioactivity ; that is, the precpitates did not contain any labeled antigens. Consequently, non-reactivity of γM antibody in the Farr test seemed to be attributable to any other factors than ammonium sulfate precipitation.