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Skin Reactive and Macrophage Migration Inhibitory Factors in Sera from Desensitized Guinea Pigs Previously Sensitized with Tubercle Bacilli

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Recently Yamamoto et al[8] reported the coexistence of Skin Reactive Factor (SRF) and Macrophage Migration Inhibitory Factor (MIF) in the sera from guinea pigs which had been sensitized with BCG cell walls and later desensitized by intravenous injection with BCG protoplasm.

In the present report we attempted fractionations of the desensitized guinea pig sera to see if distributions of these two factors were the same or not. SRF was more precipitable than MIF by low concentration of ammonium sulfate (Table 2). SRF activity was found in fractions which eluted earlier from the DEAE cellulose column than those adsorbed more firmly, the latter showed higher MIF activity (Fig 2). However, the separation of the two was not complete by these methods. On the other hand Pevikon block electrophoresis separated SRF and MIF activities completely. SRF distributed in fractions around α-globulin region and MIF in serum albumin region (Fig 3).

These results would indicate that SRF and MIF detectable in desensitized guinea pig serum may be essentially different molecular species and that MIF could be more negatively charged than SRF.

Reduction of New Tetrazolium Salts Containing Thiophen Ring by Tubercle Bacilli

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New tetrazolium salts containing a thiophen ring were prepared, and a method with 5-(2-thienyl)-2, 3-diphenyl-2H-tetrazolium chloride (STC) was found to differentiate between the bovine strain and the human strain. Colonies from sputum from patients whose sputum had previously shown only microcolonies on egg medium were detected at least one week earlier on medium containing STC than on control medium, and in some cases were not detected without the compound.

Macrophage Migration Inhibition Studies with Cells from Guinea Pigs Sensitized with Hen Egg-White Lysozyme

Yusuke MIZUNO, Kenji KURONO and Hiroyuki SHIOKAWA

Guinea pigs were sensitized with hen egg-white lysozyme and tested weekly for their sensitivity to lysozyme for four weeks.

In macrophage migration inhibition tests, the maximum inhibition was observed two weeks after the sensitization and then the inhibition was decreased quickly. The maximum skin reaction was observed after three and/or four weeks. In only one of all guinea pigs examined, a small amounts of anti-lysozyme antibody was detected four weeks after sensitization by passive hemagglutination test.

The guinea pigs that were resensitized twelve weeks after the first sensitization, showed the maximum inhibition in macrophage migration inhibition test one week after resensitization and circulating antibody was increased at the second week.

These results suggested the possibility that hen egg-white lysozyme could be used as antigen in the production of migration inhibition factor.

Macrophage Migration Inhibition Test Using Blood Lymphocytes from Tuberculosis Patients and Guinea-Pig Macrophages

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and Makoto SANEFUJI

Peripheral blood lymphocytes from tuberculin-sensitive persons were collected by the method with Ficoll and Conray and were added to normal Guinea-Pig peritoneal macrophages. These cell mixture were packed into capillaries and cultured 24 hours either in the presense or absence of PPD.

Seventeen specimens out of 19 from tuberculin sensitive persons showed a positive inhibitory reaxtion in the presense of higher doses of antigen, while all from persons with negative skin test showed negative reaction.

The technique used in this experiment is benefical to save blood volume for collection and expected to be clinically applicable in a wide range of delayed hypersensitive state and diseases.

The Migration Inhibition Test in Rabbits Sensitized with Sheep Red Blood Cells

Taturu YAMANAKA

Rabbits immunized with sheep red blood cells in Freund's complete adjuvant developed the delayed type hypersensitivity to sheep red blood cells and its soluble antigen 1 week after sensitization.

When their alveolar exudate cells were cultured with sheep red blood cells or the soluble antigen, their migration capacity was specifically inhibited.

Any parallel relationship was not observed between the degree of the skin reactivity and the migration inhibition index.

Hemmaglutinin and hemolysin against sheep red blood cells were observed 7 days after the immunization. The former was 2-mercaptoethanol sensitive from 1 to 2 weeks after immunization, but resistant from 3 to 4 weeks. The latter was sensitive from 1 to 4 weeks.

Etudes sur les «échelles» des Mycobactéries photochromogènes

par J. ARIMA, S. TAKAHASHI et H. IGARASHI

1) La forme striée «en échelles» s'est observée chez les espèces des Mycobactéries photochromogènes ; M. kansasii, M. marinum et M. asiaticum.
2) Mais, cette morphologie caractéristique n'a rien à faire avec la nature photoinductrice des facilles photochromogéniques.
3) Elle se développe à la phase latente de culture, tant en milieux liquides, qu'en milieux solides.
4) Les observations au microscope électronique nous montrent que les cellules bacillaires manifestant les «échelles» renferment des corpuscules sphériques ou bien ellipsoïdaux, transparents aux électrons qui présentent la forme d'un fil de rosaire.
5) Nous avons constaté que les parties non-colorées par la Ziehl-Neelsen correspondent aux corpuscules transparents au électrons, tandis que les parties colorées représantant les «échelles» coïncident avec les parties cytoplasmiques situées entre des corpuscules transparents au électrons.