EMBRYONIC α_2-GLOBULIN IN SERA OF RATS WITH STEFANSKY'S LEPROSY

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Embryonic α_2-globulin was found in the blood serum of rats with Stefansky's leprosy.

The blood serum of rat embryos and newborn rats has been shown [2] to contain two embryonic α-globulins (α-fetoprotein and ESA_2-globulin). ESA_2-globulin has been found in the sera of adult rats under various experimental conditions and in various states of cell proliferation [2, 6, 7, 9].

The object of the present investigation was to study the content of ESA_2- globulin in the blood serum of rats with leprosy.

EXPERIMENTAL METHOD AND RESULTS

Altogether 78 sera of noninbred rats of both sexes, weighing 150-200 g, and infected intraperitoneally with emulsion of murine leproma in physiological saline in a dilution of 1 : 20, were investigated. The animals were sacrificed in the 4th month after incubation.

To detect ESA_2-globulin in the sera, a micromodification of the methods of agar-diffusion [1] and immunoelectrophoresis [5] was used. Rabbit antiserum against the blood serum of fetal and neonatal rats (anti-SNR), exhausted with mixed serum of adult rats (from 15 animals), were used in the investigation. The α_2-globulin was titrated by means of a test system [3]. The concentration of α_2-globulin was estimated from the maximal dilution of serum which caused deviation of the precipitation line of the test system (Fig. 1).

During immunoelectrophoresis, anti-SNR revealed an antigen in the serum of the infected rats located in the zone of α_2-globulins. Comparative analysis showed that the antigen detected was similar in its electrophoretic mobility and immunological characteristics with α_2-globulin in the serum of fetal and newborn rats (Fig. 2).

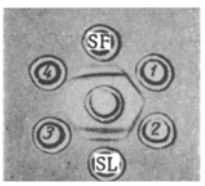

Fig. 1. Titration of ESA_2-globulin using a test system. SF) serum of rat fetuses diluted 1:32; 1-4) serum of rats with Stefansky's leprosy (SL) diluted from 1:6 to 1:512; central well contains anti-SNR

Using the test-system, ESA_2-globulin was found in the sera of all infected rats in titers of between 1:32 and 1:512. The final dilution of the serum of the healthy male rats, causing deviation of the arc of the test system, was 1:8. If anti-SNR was exhausted by the serum of infected rats, the precipitation line corresponding to α_2-globulin disappeared and only the arc characteristic of α-fetoprotein remained (Figs. 2 and 3).

Evidently the appearance of ESA_2-globulin in the sera of rats with Stefansky's leprosy is associated with

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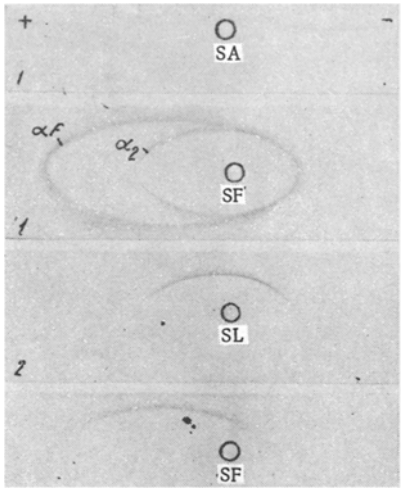

Fig. 2. Immunoelectrophoresis of sera of rat fetuses and rats with Stefansky's leprosy. 1) Anti-SNR; 2) anti-SNR exhausted with SL; SA) serum of adult rats; SF) serum of rat fetuses; SL) serum of rats with leprosy, α_F) α-fetoprotein; α_2-ESA_2-globulin.

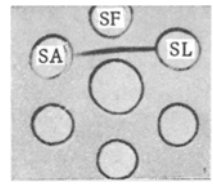

Fig. 3. Fetoprotein in serum of rat fetuses. SA) Serum of adult rats. Central well contains anti-SNR exhausted by serum of rats with Stefansky's leprosy (SL).

proliferative and necrotic processes taking place in this disease [8].

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