

PAPER ELECTROPHORESIS OF SERA FROM RATS, INOCULATED WITH INFLUENZA VIRUS TYPE A₂

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Recently paper electrophoresis is widely practiced to determine the qualitative and quantitative changes in the protein fractions of blood serum in animals inoculated with antigen-containing substances.

In our previous studies an increase was encountered of alpha-globulins in rats inoculated with influenza virus at the expense of the albumin fraction. It was also established that the high antihemagglutination titre does not always parallel with alpha-globulin increase (1, 2). The present studies were initiated in order to prove whether such a regularity will be observed also with strains of influenza virus isolated in 1963 (3). These investigations are substantiated also by the fact that strains isolated this year exhibit lower antihemagglutination titres.

Eighty medium aged albino rats were used in the experiments and the influenza strains isolated in Varna in 1963 (Panayotov, Mitov, Kaprelyan and Marinova et al.). The first group of rats included 6 subgroups of 10 rats each, inoculated with one of the influenza strains type A₂ isolated in 1963. The second group comprised 10 rats from the same breeding inoculated with alantoic fluid which did not contain any influenza virus and the third group consisted of another 10 rats untreated and left under the same environmental conditions.

On the 10th day following the second inoculation blood letting was done and electrophoresis of the obtained sera performed.

Electrophoresis was carried out at 180°C in a chamber¹ after the method described by Panayotov and collaborators (2).

The photometer of Pulfrich recorded the results.

To investigate whether any relation exists between antihemagglutination titres of sera on the one hand and protein fractions on the other a test for inhibition of hemagglutination was performed with the same sera.

The results of paper electrophoresis and the hemagglutination inhibition test (H.I.T.) are presented on Table 1.

From the Table an increase of alpha-globulins in the inoculated rats becomes evident.

Albumins in healthy noninoculated rats amount to 28,7% on the average and 29% in rats inoculated with native alantoic fluid while in rats inoculated with alantoic fluid containing influenza virus they amount to 34,5% on the average. Electrophoretic studies reveal an in-

¹ The bath used in the experiments is made of paraffin and is 17,5 cm long. It also has a device to elevate the stretched paper which prevents the absorption of excessive puffer — an important prerequisite for the separation of fractions.

crease of globulins. The high antihemagglutination titre does not run parallel to the increase of globulins. No specific change in the electrophoregrams of avid and nonavid strains is recorded (4,6).

Table
Results of paper electrophoretic studies of blood sera of rats inoculated with allantoic fluid containing influenza virus

Albumins %		Globulins %					Antihemagglutination titre		
		α ₁	α ₂	α	β	γ			
Sera from rats	inoculated with allantoic fluid containing influenza virus	1	36	23	6	29	23	12	1 : 320
		6	34	30	7	37	20	9	1 : 40
		15	34	25	7	32	24	10	1 : 320
		4	33	28	6	34	23	10	1 : 80
		24	35	25	8	33	21	11	1 : 160
	inoculated with native allantoic fluid	33	35	25	8	33	21	11	1 : 160
			29	8,5	9,5	18	25	28	—
	noninoculated		28,7	15,6	11,6	27,2	22,04	21,8	—

REFERENCES

1. Митов, Г., Н. Андреев, Д. Аврамов и др. — *Хигиена*, 2, 46, 1963. —
2. Панайотов, П., Г. Митов, Г. Капрелиян и др. — *Научни трудове Висш медицински институт — Варна*, том 11, свитък 11, 1963. —
3. Панайотов, П., Г. Митов, К. Кузмов и др. — *Научни трудове Висш медицински институт — Варна*, том 11, свитък 11, 1963.

**БУМАЖНОЭЛЕКТРОФОРЕТИЧЕСКИЕ ИССЛЕДОВАНИЯ СЫВОРОТОК
КРОВИ КРЫОИНОКУЛИРОВАННЫХ ВИРУСОМ ГРИППА ТИПА А2**

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Р Е З Ю М Е

Сделаны бумажноэлектрофоретические исследования сыворотки крови 3 групп крыс. Первая группа крыс охватывает 6 подгрупп, каждая из которых инокулирована одним из изолированных в 1963 году гриппным штаммом типа А₂. Вторая группа охватывает крыс инокулированных алантонснй жидкостью, которая не содержит вируса гриппа. Третья группа охватывает крыс из того-же стада нетретированных, оставленных при тех-же условиях. Установлено наличие увеличения γ -глобулинов в первой группе животных. Не устанавливается зависимость между высоким антигеомоагглютинационным титром и глобулиновыми фракциями. Не устанавливается какая либо особенность в авидных и неавидных штаммах (4 и 6).