

NEW ANTIGENS IN *COXIELLA BURNETII* ?

J. Úrvölgyi, R. Brezina

Institute of Virology, Slovak Academy of Sciences, 809 39 Bratislava, Czechoslovakia

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The discovery (1) of phase variation phenomenon of *Coxiella burnetii* revealed that this organism contains two major antigenic components: antigen 1 and antigen 2. The existence of further antigenic substances in *C. burnetii* was anticipated (2).

We renewed the study on the antigenic structure of *C. burnetii* by absorption of immune human and animal sera with *C. burnetii* organism in natural or artificial phase II (3). Human sera were collected during the acute stage of Q fever; guinea pig sera were harvested 7 days after intraperitoneal immunization with suspensions of organisms in phase I, artificial phase II (both from strain Nine Mile in the 6th chick embryo yolk sac passage — Ep 6) or natural phase II (Ep 163). The sera were absorbed for 2 hr at 37 °C and another 18 hr at 4 °C with sediments of organisms in natural or artificial phase II (40-50 mg per ml of serum). Non-absorbed and absorbed sera were titrated in the microagglutination test (4) with stained phase I, and natural and artificial phase II antigens.

Human post-infection sera and sera of guinea pigs immunized with phase I organisms after absorption with organisms in natural or artificial phase II did not react with antigen prepared from those organisms by which the serum was absorbed, but did react with the other antigen. Sera of guinea pigs immunized with organisms in natural or artificial phase II and absorbed with homologous antigens, gave no reaction with either phase II natural or artificial antigens, but reacted with homologous antigens when absorbed with heterologous phase II antigen. No serum reacted with antigen prepared from phase I organisms.

Serum	Antibody titres with phase II antigens					
	artificial			natural		
	A	B	C	A	B	C
Human, natural infection	2048	<2	128	4096	256	<2
Guinea pig, phase I	1024	<2	512	2048	512	<2
Guinea pig, phase II artificial	1024	<2	64	1024	<2	<2
Guinea pig, phase II natural	512	<2	<2	1024	32	<2

A, B, C: serum not absorbed and absorbed with organisms in artificial phase II and natural phase II, respectively.

These results allow the conclusion that, besides antigen 1 and antigen 2, *C. burnetii* contains further antigenic components able to elicit antibody response and to react serologically with these antibodies.

References

1. Stoker, M. G., and Fiset, P., *Can. J. Microbiol.* 2: 310, 1956.
2. Úrvölgyi, J., and Brezina, R., *Acta virol.* 23: 439, 1979.
3. Schramek, S., Brezina, R., and Úrvölgyi, J., *Acta virol.* 16: 487, 1972.
4. Fiset, P., Ormsbee, R. A., Silberman, R., Peacock, M., and Spielman, S. H., *Acta virol.* 13: 60, 1969.