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Fibrinolytic Specificity of *B. pestis.**

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Applying the plasma-clot technic, Tillett and Garner[1] demonstrated fibrinolytic enzymes in broth cultures of streptococci and staphylococci. All other bacterial species tested by them were fibrinolytically negative.

A negative reaction with the plasma-clot technic, however, is not conclusive evidence of the absence of a fibrinolytic factor. Many plasma-clots are known to contain neutralizing antibodies. We

TABLE I.

Rate of *B. pestis* fibrinolysis.

0.5 cc. 24-hour veal-infusion broth culture of *B. pestis* plus 1 cc. dilute fibrinogen-thrombin complex, prepared by the technic of Tillett and Garner.[1] ++++, complete lysis of the resulting fibrin-clot within 15 minutes; +++, within 30 minutes; ++, 60 minutes; +, 2 hours; ±, partial liquefaction, 2 hours; 0, no demonstrable softening of the clot by the end of 2 hours incubation. (Note: With some of the apparently insusceptible fibrins, partial or complete lysis was demonstrable after 4-6 hours incubation.)

B. pestis strain No.	Lysis of serum-free fibrin isolated from: Man	Rhesus monkey	Ground squirrel	Guinea pig	Rat	Rabbit	Cat	Cow	Other animals*
1	+	0	+	±	±	0	+	±	0
2	+++	0	+	+++	++	++	++	+	0
3	+++	0	+	++++	+++	++	+	+	0
4	++	0	++	++	++	++	+	++	0
5	+++	0	++	+++	+++	++	++	+	0
6	++	+	+	++++	+++	++	++	+	0
7	++	+	+	+++	+++	+++	++	+	0
8	+++	+	++	+++	+++	++	++	+	0
9	+++	++	+	++++	++++	+++	++	++	0
10	+++	+	±	++++	+++	+++	±	+	0
11	+++	+	++	+++	+++	+++	++	++	0
12	+++	0	±	++	+++	++	±	0	0
13	+++	+	+	+++	+++	+++	++	+	0
14	+++	0	+	+++	++	++	+	+	0
15	++	+	±	++++	+++	++	++	0	0
16	+++	+	++	+++±	+++	+++	++	+	0
Control (autolysis)	0	0	0	0	0	0	0	0	0

*Sheep, horse, hog, hen.

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[1] Tillett, W. S., and Garner, R. L., *J. Exp. Med.*, 1933, **58**, 485.

have, therefore, tested all locally available bacterial species (231 strains) by the serum-free fibrin-clot technic.

In addition to certain pyogenic cocci, all locally available strains of *B. pestis* are strongly fibrinolytic, particularly when tested with rat- or guinea pig-fibrin. Fibrinolytic tests with the 16 available bubonic plague cultures are recorded in Tables I and II.

TABLE II.

Fibrinolytic Titer of *B. pestis* cultures.

Serial dilutions (1:2) of 24-hour veal-infusion broth cultures of *B. pestis* tested against serum-free fibrin-clots (*cf.* Table I). The highest dilution of the culture giving complete liquefaction of the fibrin-clot by the end of 2 hours was assumed to contain one arbitrary fibrinolytic unit.

B. pestis strain No.	Lytic units per 0.5 cc. when tested against fibrin from: Man	Rhesus monkey	Ground squirrel	Guinea pig	Rat	Rabbit	Cat	Cow	Other animals*
1	8	0	8	1	2	0	2	1	0
2	32	0	8	28	256	4	8	2	0
3	32	0	8	32	256	4	2	2	0
4	16	0	24	8	64	4	2	3	0
5	32	0	24	28	256	4	16	2	0
6	16	2	8	32	64	4	16	2	0
7	16	2	8	28	64	4	8	2	0
8	32	2	8	28	64	4	16	2	0
9	32	3	8	32	256	4	8	3	0
10	32	2	2	32	256	4	1	2	0
11	32	2	24	28	256	4	16	3	0
12	28	0	2	8	64	4	2	0	0
13	32	2	8	28	256	4	8	2	0
14	32	0	8	28	256	4	8	2	0
15	16	2	8	32	64	4	2	2	0
16	32	2	24	32	256	4	16	2	0
Average 2-16	28	1	11	27	179	4	9	2	0
Relative susceptibility of fibrin	16%	½%	6%	15%	**100%**	2%	5%	1%	0%

*Sheep, horse, hog, hen.

Strain 1 in Tables I and II is a 20-year-old stock culture of *B. pestis* originally isolated from a human case. Strains 2-16 have been isolated during the last 12 months from field mice and ground squirrels. These 15 strains were kindly furnished for our work by Dr. Karl F. Meyer, Hooper Foundation, University of California.

Table II shows that the fibrinolytic factors formed or secreted by the 15 rodent strains are relatively specific (or of relatively high titer) for rat-fibrin. The one available human strain, however, yields lytic factors of relatively high titer for ground squirrel and human fibrins.