

had been successfully transformed and stabilized as a non-fibrinolytic strain of presumptive bovine origin.

That this is a justifiable interpretation of our data is shown by the almost perfect reversion of the 15th recovery strain to its original antihuman diagnostic specificities by the 7th subculture on routine culture medium. Typical stages in this reversion are recorded in Table II.

TABLE II. Qualitative and Quantitative Reversion on Routine Culture Medium.

A single hemolytic colony recovered from the 15th rabbit passage was transplanted at 2-week intervals on routine 2% rabbit-blood beef-heart-infusion agar. Titrations as in Table I.

No. of subculture	"Carbohydrate" titer			Fibrinolytic titer
	Type A	Type C	Type E	
C203 before animal passage	++++	0	0	++++
C203 after 15th rabbit passage	0	0	+++	0
3rd subculture of recovered strain	0	0	0	++
5th " " "	++	0	0	+++
7th " " "	+++±	0	0	+++
10th " " "	++++	0	0	+++
15th " " "	++++	0	0	+++±

7798 C

Susceptibility of "Hybrid" Fibrins to Streptococcus Fibrinolysins.*

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Tillett and Garner¹ found that both of the human-rabbit heterologous fibrinogen-thrombin complexes are liquefied by the specific antihuman fibrinolysin formed or secreted by certain strains of *S. hemolyticus*, native rabbit fibrin being refractory to this specific bacterial lysin.

Quantitative differences, however, are demonstrable between the susceptibilities of the 2 Tillett-Garner hybrid fibrins. Fibrin formed by coagulating human-fibrinogen with rabbit-thrombin, for example, may require a 1:48 concentration of a given streptococcus filtrate to show demonstrable lysis. One-and-a-half times this lytic dose, or a

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

TABLE II. Liquefaction of Hybrid Fibrins by Antiveterinary Fibrinolysins.

The anti-horse fibrinolysin (upper half of table) was formed by a strain of *S. hemolyticus* originally isolated from a case of 'horse strangles'. The anti-swine strain (lower half of table) was originally isolated from a case of 'hemorrhagic septicemia' in swine. This strain gives a slight cross-lysis with human fibrin. In the upper table normal horse-fibrin was taken as the 100% standard; in the lower table, normal swine-fibrin.

Thrombin from:	Fibrinogen from:										
	Man	Monkey	Horse	Fowl	Rabbit	G.P.	Cow	Sheep	Dog	Cat	Swine
Man	0	0	150	0	0	0	0	0	0	0	0
Rhesus monkey	0	0	100	0	0	0	0	0	0	0	0
Horse	100	25	100%	0	12	0	6	3	0	0	0
Domestic fowl	10	0	25	0	0	0	0	0	0	0	0
Rabbit	0	0	25	0	0	0	0	0	0	0	0
Guinea pig	0	0	25	0	0	0	0	0	0	0	0
Cow	0	0	25	0	0	0	0	0	0	0	0
Sheep	0	0	25	0	0	0	0	0	0	0	0
Dog	0	0	0	0	0	0	0	0	0	0	0
Cat	0	0	0	0	0	0	0	0	0	0	0
Domestic swine	0	0	50	0	0	0	0	0	0	0	0
Man	1	1	0	1	1	0	0	0	0	0	150
Rhesus monkey	0	0	0	0	0	0	0	0	0	0	100
Horse	0	0	0	0	0	0	0	0	0	0	200
Domestic fowl	0	0	0	0	0	0	0	0	0	0	100
Rabbit	0	0	0	0	0	0	0	0	0	0	25
Guinea pig	0	0	0	0	0	0	0	0	0	0	50
Cow	0	0	0	0	0	0	0	0	0	0	25
Sheep	0	0	0	0	0	0	0	0	0	0	100
Dog	0	0	0	0	0	0	0	0	0	0	50
Cat	0	0	0	0	0	0	0	0	0	0	12
Domestic swine	50	12	12	0	50	0	50	0	50	12	100%

1:32 concentration, may be required for a similar lysis of fibrin formed by coagulating rabbit-fibrinogen with human-thrombin. Since native human fibrin is dissolved by a 1:64 concentration of this filtrate, the relative susceptibilities of the 2 Tillett-Garner hybrid fibrins may be expressed as 75% and 50% of that of normal human fibrin.

Adopting this same percentage method of recording our experimental data, the relative susceptibilities of about 100 other hybrid fibrins are summarized in Table I.

From this table it is seen that both human-fibrinogen and human-thrombin are carriers of the normal human susceptibility to the Tillett-Garner streptococcus fibrinolysin. With certain human-veterinary hybrid fibrins an almost complete loss of the human susceptibility is noted. Both rhesus-fibrinogen and rhesus-thrombin are approximately 10% human in streptolytic susceptibility.

With the discovery² that certain veterinary streptococci are specifically lytic for lower animal fibrins, the above hybrid fibrins were retested with 2 antiveterinary fibrinolysins. Data thus obtained are recorded in Table II.

In these tests, also, both the fibrinogen and thrombin of the susceptible animals (horse, swine) are species-specific in their relationships to streptofibrinolysins. There is here, also, an apparent denaturation of the susceptible component in certain hybrid fibrins. Three hybrid fibrins show fibrinolytic hypersusceptibility.

7799 C

Attempt to Modify Hereditary Chromogenic Genes by Heterophile Antimelanin Immunization.*

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The demonstration by Adant¹ that beef-choroid melanin is antigenic for albino rabbits and that the resulting antisera give com-

² Madison, R. R., *PROC. SOC. EXP. BIOL. AND MED.*, 1934, **32**, 444.

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¹ Adant, A., *Compt. rend. Soc. Biol.*, 1932, **111**, 241.