test this hypothesis by the administration of glucose to adrenalectomized animals.

7955 C

Stability of Streptofibrinolysin.*

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Quantitative studies of antifibrinolytic immunity are made difficult by the multiplicity of reacting (or conditioning) factors in sterile† streptococcus filtrates and by the non-applicability of simple

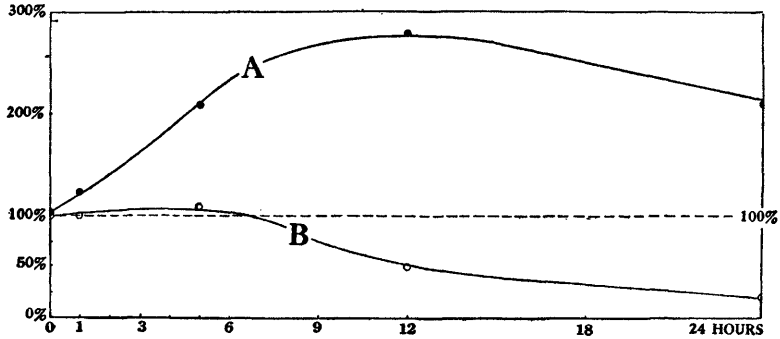

FIG. 1. *Serological Exaltation of Fibrinolytic Titer.*

Chamberland (L-3) filtrates from 24-hour broth cultures of *S. hemolyticus* were diluted with an equal volume of 0.25% to 0.5% normal horse serum, control dilutions being made with the same volume of 0.8% NaCl-solution. The dilute filtrates were then incubated at 37°C. At various times during this incubation, samples were titrated for their antihuman fibrinolytic function.

The lytic unit selected for these titrations was the minimum volume of the original filtrate that would cause demonstrable lysis of the serum-free human-fibrin clot, by the end of one hour, materials, dilutions, etc., being identical with those used by Tillett and Garner.[1] The original titer of the filtrate is recorded as 100%.

A. 50% Streptococcus filtrate A containing 1:600 normal horse serum. (Composite data from two titrations.)

B. Control test with serum-free filtrate.

* Supported in part by the Eli Lilly and Co. Streptococcus Research Fellowship of Stanford University and in part by the Rockefeller Fluid Research Fund of Stanford Medical School.

† These filtrates gave no demonstrable growth in veal-infusion broth or on routine 5% rabbit-blood agar.

[1] Tillett, W. S., and Garner, R. L., *J. Exp. Med.*, 1933, **58**, 485. Van Deventer, J. K., PROC. SOC. EXP. BIOL. AND MED., 1934, **32**, 366.

physicochemical laws to the neutralization of such filtrates with streptococcus antiserum.

A 200% increase in effective fibrinolytic titer often takes place in control mixtures of streptococcus filtrate and normal horse serum. A typical example of this serological exaltation of fibrinolytic titer is recorded in Fig. 1.

Similar activations, depolymerizations, maturizations or apparent proliferations of the fibrinolysin take place during the process of neutralization with specific immune serum.‡ With border-line serum doses the resulting diphasic or triphasic neutralization curves give data, from which the titer of the antiserum is difficult to calculate. Typical curves of this type are recorded in Fig. 2.

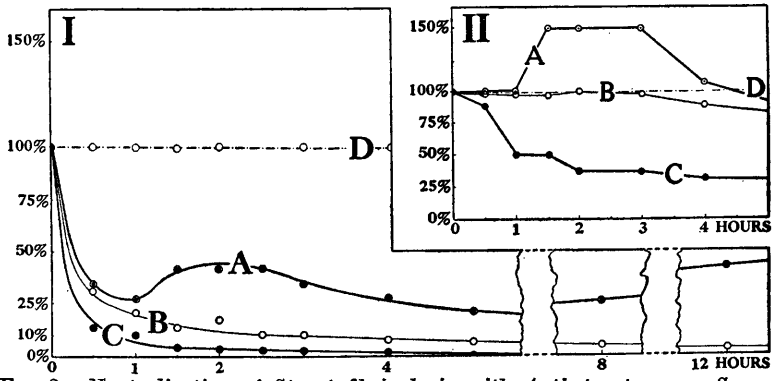

FIG. 2. *Neutralization of Streptofibrinolysin with Anti-streptococcus Serum.*

Titration technic as in Fig. 1, but with the substitution of specific immune serum in place of normal horse serum.

I. Neutralization of streptococcus filtrate C with commercial antiserum X. A, diphasic curve with 1:3,000 antiserum; B, monophasic curve with 1:2,000 immune serum; C, 1:1,000 immune serum; D, control test with 1:2,000 normal horse serum.

II. Neutralization of streptococcus filtrate D with commercial antiserum Y. A, quasi-proliferation of the fibrinolysin in the presence of 1:6,000 immune serum; B, apparent non-neutralization of the lysin with 1:3,000 immune serum; C, typical neutralization with 1:1,000 immune serum; D, control test with 1:1,000 normal horse serum.

The fibrinolytic titer of a streptococcus filtrate is often inadvertently increased under routine experimental conditions, even in the absence of normal or specific immune serum. Such quasi-proliferation of the fibrinolysin is quite constant, for example, in dilute filtrates stored at refrigerator temperatures. Typical data are recorded in Fig. 3.

‡ The normal and specific immune horse serums used in these tests were kindly furnished by Eli Lilly and Co., The Cutter Laboratory, Lederle Laboratories, E. R. Squibb and Sons, and Parke, Davis and Co.

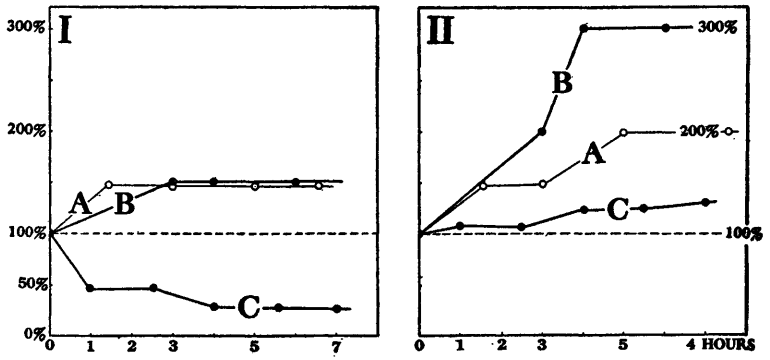

FIG. 3. *Effect of Refrigeration on Dilute Streptococcus Filtrate.*

Filtrates A and B were diluted with 4-volumes and filtrate C with 14-volumes of 0.8% NaCl-solution.

I. Change in lytic titer in dilute filtrates A, B and C as a result of storage at 37°C.

II. Parallel changes in titer of control samples stored at 4°C.

No theory is as yet suggested as to the probable mechanism of these unprecedented increases in lytic titer.

Whether or not similar augmentations of lytic activity take place in the animal body (*e. g.*, as a result of the administration of subtherapeutic doses of antistreptococcus serum), is a problem of practical clinical interest.

7956 C

Effects of 2-4 Dinitrophenol on Respiration of Commercial Cake Yeast.*

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De Meio and Barron[1] state that neither their findings nor those of Ehrenfest and Ronzoni[2] support "Field, Martin and Field's[3, 4]

* Supported in part by a grant from the Rockefeller Fluid Research Fund of the Stanford University School of Medicine.

1 De Meio, R. H., and Barron, E. S. G., PROC. SOC. EXP. BIOL. AND MED., 1934, **32**, 36.

2 Ehrenfest, E., and Ronzoni, E., PROC. SOC. EXP. BIOL. AND MED., 1933, **31**, 318.

3 Field, J., 2nd, Martin, A. W., and Field, S. M., PROC. SOC. EXP. BIOL. AND MED., 1933, **31**, 56.

4 Field, J., 2nd, Martin, A. W., and Field, S. M., *J. Cell. and Comp. Physiol.*, 1934, **4**, 405.