

sulfathiazol content occurred when bile was stored for several days. It was not possible to test the material for the presence of acetylated sulfathiazol by the methods available. It seems improbable although not absolutely impossible, that acetylsulfathiazol might have been present in bile in spite of the practically complete absence of acetyl-sulfanilamide in such material.² The authors are not able to give a satisfactory interpretation of this finding, but they do wish to point out one result of the difference in concentration of sulfanilamide and sulfathiazol in the bile. When relatively large amounts of a readily absorbed substance enter the bile and are returned to the intestine the time during which the compound remains in the body is prolonged. Excretion by the liver, therefore, will tend, at least slightly, to prolong the period during which sulfanilamide remains in the body as compared with the time sulfathiazol remains in the body.

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Ineffectiveness of Adrenal Cortical Hormone on Serum Complement of the Guinea Pig.*

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Partial adrenalectomy increases the susceptibility of guinea pigs and rats to anaphylactic shock.^{1, 2, 3} The lethal dose of antigen has been found to be inversely proportional to the degree of adrenal insufficiency. Wolfram and Zwemer⁴ report that "cortin" protects normal sensitized guinea pigs against fatal anaphylaxis. In the dog the severity of anaphylactic shock is said to be lessened by the previous injection of cortical hormone.⁵ Perla and his coworkers⁶

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1 Kepinow, L., *Compt. rend. Soc. Biol.*, 1922, **87**, 327.

2 Flashman, D. H., *J. Inf. Dis.*, 1926, **38**, 461.

3 Wyman, L. C., *Am. J. Phys.*, 1929, **89**, 356.

4 Wolfram, J., and Zwemer, R. L., *J. Exp. Med.*, 1935, **61**, 9.

5 Dragstedt, C. A., Mills, M. A., and Mead, F. B., *J. Pharm. and Exp. Ther.*, 1937, **59**, 359.

6 Perla, D., Freiman, D. G., Sandberg, M., and Greenberg, S. S., *Proc. Soc. Exp. Biol. and Med.*, 1940, **43**, 397.

report an increased resistance in rats to histamine shock by the use of "cortin". These observations parallel others in which cortical extract is said to improve the lowered resistance of adrenalectomized animals to bacterial infection.^{7, 8} This has been explained as due to increased antibody production, especially in the earlier stages of the immunizing process.⁹

Since anaphylactic shock, whether actively or passively transmitted, is accompanied by a fall in serum complement,¹⁰ it is of interest to see whether the reported protective effect of cortical hormone can be attributed to an alteration in the titer of the serum complement.

Method. Healthy adult guinea pigs were kept on a high vitamin C diet for several weeks prior to use, in order to exclude any effect of vitamin C deficiency on the level of serum complement.¹¹ Blood for titration of complement was obtained by cardiac puncture, with or without ether anesthesia. (In a series of preliminary experiments the use of ether anesthesia did not change the complementing activities of the sera. This confirms the observations of Ecker.¹²) The method of titration of complement was exactly as previously reported.¹³ Sera were diluted 1:30 with Brooks' solution and titrated immediately after dilution for the point of initial hemolysis.

Two different preparations of cortical hormone were used: (1) adrenal cortical extract in 10% alcohol (50 dog units per cc) "Cortin"[†] and (2) desoxycorticosterone acetate in sesame oil (5 mg per cc) "Percorten."[‡] Control animals were used for complement titrations in all experiments.

Twenty animals were injected intraperitoneally with varying amounts of Cortin (5 to 150 dog units) or Percorten (0.5 to 8.0 mg) and bled from 2 to 6 hours later. Control animals were injected with the same amount of sterile saline solution. The complement titer of the blood at the point of initial hemolysis was not significantly different in the treated group (0.045 cc of serum) from

⁷ Perla, D., and Mormorston, J., *Arch. Path.*, 1933, **16**, 379; *Endocrinology*, 1940, **27**, 367.

⁸ Zinsser, H., Enders, J. F., and Fathergill, L. G., *Infection, Immunity and Resistance*, Macmillan, 1939.

⁹ Fox, C. A., and Whitehead, R. W., *J. Immunology*, 1936, **30**, 51.

¹⁰ Zinsser, H., and Jones, S. Bayne, *Textbook of Bacteriology*, 7th ed., Appleton-Century Co., 1934.

¹¹ Ecker, E. E., Pillemer, L., Wertheimer, D., and Gradis, H., *J. Immunology*, 1938, **34**, 19.

¹² Ecker, E. E., Pillemer, L., and Wertheimer, D., *J. Immunology*, 1938, **34**, 39.

¹³ Cope, O., and Kapnick, I., *Endocrinology*, 1940, **27**, 533.

[†] Kindly furnished by Upjohn & Co.

[‡] Kindly furnished by Ciba & Co.

that of the control group (0.041 cc of serum). This was true even with massive doses (up to 500 dog units of Cortin and 30 mg of Percorten). No immediate or late ill effects from these substances were noted.

A group of 5 animals were injected with 0.5 mg of desoxycorticosterone acetate 3 times daily for 10 days, and complement titrations were carried out before starting the experiment, after the fifth day, and also after the tenth day in the 4 surviving animals. One animal died as a result of cardiac puncture. No change in the serum complement titer was observed in any of these animals.

In further experiments, in which the cortical extract was added to guinea pig sera *in vitro*, no change in complement was demonstrated.

Five animals were sensitized to horse serum by the intramuscular injection of 0.1 cc of horse serum. Complement titrations carried out 14 days later showed no significant change after a period of 2-6 hours following the intraperitoneal injection of cortical extract in doses similar to those listed above.

Comment. Cope and Kapnick^{13, 14} have reported that adrenal cortical insufficiency, both in the rabbit and dog, results in no change in the concentration of serum complement. In the work reported here, there is no significant change in serum complement on the injection of cortical hormone into normal guinea pigs and into normal sensitized guinea pigs. It is probable, therefore, that adrenal cortical hormone does not influence anaphylaxis or immunity through an effect upon serum complement.

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Comparison of Growth of *Trichomonas foetus* and *Trichomonas vaginalis* in Chick Embryos.*

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Nelson¹ first reported the cultivation of *Trichomonas foetus* in

¹⁴ Kapnick, I., and Cope, O., *Endocrinology*, 1940, **27**, 543.

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¹ Nelson, P. M., *Proc. Soc. Exp. Biol. and Med.*, 1938, **39**, 258.