

TABLE III. Influence of Normal and Extracted Plasma* on Growth of *S. fecalis* in the Presence of Lupulone.

Lupulone	Total growth (Log G _{initial} —Log G _{final})	
	Normal plasma	Extracted plasma
—	.418	.421
5 ppm	.309	.284
10 ppm	.258	.194
20 ppm	.186	.046

* Residue after 6 chloroform extractions.

of lupulone. In fact, rough calculations comparing the antagonistic action of plasma with that of purified egg phosphatides indicate that the latter are only about one-tenth as active as might be anticipated. Substances in serum other than phospholipids may have considerable lupulone-inactivating property, or egg phosphatides may be less active than plasma phosphatides, or purified phosphatides may be less active than phosphatides occurring in the natural state (presumably as lipo-proteins). The fact that lupulone inhibition was found

to be reversible by the subsequent addition of plasma is evidence of the bacteriostatic nature of the lupulone antibiosis and contrasts with the irreversible action of detergents(6), where only prior or simultaneous addition of phosphatides is effective.

Summary. 1. Lecithin and cephalin are capable of neutralizing the inhibiting properties of lupulone. 2. Evidence is presented indicating that the antagonistic effect of serum on the bacteriostatic action of lupulone is due, at least in part, to its phosphatide content. 3. The inhibition of respiration by lupulone may be reversed by the subsequent addition of plasma.

The authors wish to thank Elizabeth A. McComb of this laboratory for the determinations of phosphorus.

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Received November 27, 1950. P.S.E.B.M., 1951, v76.

Variations in Anti-Hyaluronidase Titre of Normal Human Serum with Age and Sex.* (18447)

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In the course of studies on the serum anti-hyaluronidase in leukemia, and lymphosarcoma, by means of the viscosimetric method, it became necessary to reinvestigate the anti-hyaluronidase titres of normal human serum. Studies of the anti-hyaluronidase titre measured by the turbidimetric method, have shown that appreciable variations in the titre occur between certain age groups(1,2), and between sexes(2). However, none of the studies dealing with viscosity(3-7) have

noted any variations in the titre due to sex, within the age groups studied. As the present data indicate, the anti-hyaluronidase titre in the serum of the normal female is appreciably higher than that of the normal male.

Method. The viscosity method as reported by Haas(3) has been used. The anti-hyaluronidase titre is expressed as the percent inhibition of the hyaluronidase activity by 0.02 ml of serum.

Results. The data are summarized in

* Aided by a grant from the Charles R. Blakely Fund of the National Research Council.

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TABLE I. Variations in the Anti-Hyaluronidase Titre with Age and Sex.
Total No. cases, 72; males, 35; females, 37.

Age, yrs	Male				Female			
	No. cases	%	S.D.	S.E. _m	No. cases	%	S.D.	S.E. _m
0-20	2	21.2	—	—	0	—	—	—
21-30	9	31.2	5.09	1.78	10	32.8	4.16	1.39
31-40	9	24.9	4.00	1.40	8	34.7	8.88	3.36
41-50	6	31.1	5.37	2.40	10	39.8	6.94	2.32
51-60	6	28.7	4.77	2.14	5	39.4	3.64	1.82
61-80	3	34.9	—	—	4	37.5	—	—
Both sexes group 21-30 mean = 32.0% $\pm$ 0.997.								
Male group, 31-60					Female group, 31-60			
Mean — 28.2% $\pm$ 1.220					Mean — 38.0% $\pm$ 1.926			
S.D.—3.13					S.D.—2.84			
S.E. _m —1.809%					S.E. _m —1.640%			

TABLE II. Comparison of Male and Female Titres.

Age, yrs	Sig. ratio	Level of sig., %
21-30	0.770	46.0
31-40	2.694	1.7
41-50	2.610	2.0
51-60	3.816	0.6

Table I. Between the ages of 21 and 30 years, the mean anti-hyaluronidase titre (percent inhibition) is the same. Beyond this age level, a significant difference in titres appears in the serum of the two sexes. The anti-hyaluronidase concentration of the serum of the normal male between the ages of 31 and 60 years remains constant at 28.2% $\pm$ 1.220 (P.E._m). However, the titre of the serum from the female between these same ages rises to 38.0% $\pm$ 1.926.

Accepting a 5% level of significance, it may be seen that the difference between the 2 titres is statistically significant for males and females above the age of 31. Since the majority of females studied, of the age 31 or over

had entered or passed the menopause, it would seem that this endocrinological change is associated with an elevation in the anti-hyaluronidase titre of the serum.

The failure to recognize this difference in the titre between the sexes could easily lead to uncertainty in the interpretation of the anti-hyaluronidase level in serum from pathological conditions.

Conclusions. 1. The anti-hyaluronidase titre of the normal human serum has been determined by the means of the viscosimetric method.

2. The anti-hyaluronidase titre is the same for both sexes between the ages of 21 and 30 years (32.0%). Between the ages of 31 and 60 years the titre in the serum from the normal female (38.0%), is significantly higher than that of the male (28.2%).

The bull testicular hyaluronidase was furnished through the kindness of Dr. Irwin C. Winters, Director of Research, G. D. Searle and Co.

Received November 28, 1950. P.S.E.B.M., 1951, v76.

Serum Anti-Hyaluronidase in Human Leukemia and Lymphosarcoma. Effects of Cortisone and ACTH.* (18448)

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The present studies deal with the serum

anti-hyaluronidase in human leukemia and lymphosarcoma, and with the changes in the levels following treatment with cortisone, ACTH and other forms of therapy. Follow-

* Aided by a grant from the Charles R. Blakely Fund of the National Research Council.