

The molal calcion buffer value at pH 7.35 is 0.111 or 28 per cent of the maximum for the carbonates and 0.265 or 45 per cent of the maximum for the phosphates.

The calcion buffer value of the carbonates of normal blood serum at pH 7.35 is 3.5×10^{-3} and that of the serum phosphate is 0.5×10^{-3} . The combined calcion buffer value of blood serum is 4.0×10^{-3} .

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Preliminary report on human skin reactions to the "residue antigen" of the tubercle bacillus and to purified allied substances.

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Intracutaneous tests were made with solutions of the "residue antigen" prepared from dried tubercle bacilli, as described by Zinsser. This "antigen" shows none of the usual color reactions for the presence of protein. It has been shown by Zinsser and his co-workers to give specific precipitin tests with immune rabbit serum, and specific skin reactions of the tuberculin type in guinea pigs.¹

Patients were tested with both O.T. and "residue antigen". We can conclude that the "residue antigen" from the tubercle bacillus is not injurious to the skin of the normal human being in amounts which cause injury to the skin of the individual allergic to the tubercle bacillus. This allergy of the infected individual is manifest as skin sensitiveness of varying degrees which parallels the sensitiveness to O.T.* We have no evidence of any correlation of the degree of sensitivity with the extent or activity of the infection.

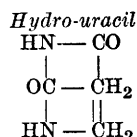
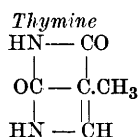
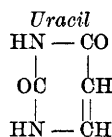
¹ Zinsser, H., and Barker, J. *Exp. Med.*, 1923, xxxvii, 275.

* Roughly 0.0007 mg. of "residue antigen" is equivalent to 0.01 of O.T.

No. of Cases	Reaction to O.T.		Reaction to "Residue Antigen"	
	0	10 mg.	0	0.07 mg.
14 patients	+	only to 1 mg.	+	only to 0.07 mg.
2 patients	+	only to 0.1 mg.	+	only to 0.007 mg.
4 patients	+	only to 0.01 mg.	+	only to 0.007 mg.
17 patients	+	only to 0.01 mg.	+	only to 0.007 mg.
3 patients	+	only to 0.01 mg.	+	only to 0.0007 mg.
1 patient	+	only to 0.001 mg.	+	only to 0.0007 mg.
11 patients	+	only to 0.001 mg.	+	only to 0.00007 mg.

In the known tuberculous adults the reaction to a small amount of "residue antigen" was a sharp, well-defined area of injury without much swelling or redness, which was easily seen to be positive when measuring only 5 x 5 mm.

With the general plan of testing out the various non-protein derivatives of the tubercle bacillus as Professor T. B. Johnson could give them to us in pure form, we have made tests with a few nucleic acid derivatives which he had immediately available and very kindly gave to us. After preliminary toxicity tests in animals, intracutaneous injections of 20 mg. were made on five adults who showed marked positive reactions to 0.1 mg. of O.T. The following substances were used. There were no reactions.



The negative tests reported here are of interest only insofar as they indicate that these simple derivatives, if they were split off by the mechanism of the specific reaction, would not cause the type of injury under discussion.

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Further experiments on the antirachitic action of yolk of egg.

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In previous communications¹ it was shown that egg yolk is

¹ Hess, A. F., The therapeutic value of egg yolk in rickets, *Proc. Soc. Exp. Biol. and Med.*, 1921, xx, 369; *J. Am. Med. Assn.*, 1923, lxxxi, 15.