

# STABILITY OF THE ANTIGEN USED IN THE PRICE PRECIPITATION REACTION UNDER DIFFERING TEMPERATURE CONDITIONS\*

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The sensitivity and specificity of the Price Precipitation Reaction for syphilis (Price, 1948) when performed in Great Britain is widely recognized. There is, however, little concrete information on the behaviour of the test under tropical conditions and the Royal Army Medical Corps is now conducting a trial of the Price Precipitation Reaction (P.P.R.) in all Army laboratories, using the test for the sero-diagnosis of syphilis. The results of this trial, when completed, will include a high proportion of reports from laboratories in tropical and sub-tropical areas.

While initial reports from these sources would appear to confirm the reliability of the P.P.R. when performed under tropical conditions, it has been suggested that the antigen used in the test might deteriorate rather rapidly and become unduly sensitive when stored in warm climates.

The Serology Laboratory of the Royal Army Medical College has, therefore, conducted two trials using antigen solutions stored at different temperatures and the results obtained are published below, as they give some indication of the general stability of the antigen.

## Material

(1) In the first trial two antigens were used :

**Antigen No. 1.**—A sample of a batch of antigen (No. III) prepared at the Royal Army Medical College in November, 1951.

This sample was stored for 6-7 months in the dark at room temperature in the Far East Command Laboratory, Singapore, and portions were used for performing the P.P.R. as required. The remainder was returned to the Royal Army Medical College in January, 1953.

**Antigen No. 2.**—A sample of a batch of antigen (No. IV) prepared at the Royal Army Medical College in July, 1952, was stored in the dark at room temperature in the R.A.M. College laboratory.

Both antigens were tested against pooled negative and positive sera as shown in Table I, and no difference in reactivity could be detected between them.

TABLE I  
RESULTS OF TESTING FIVE POOLED SERA WITH P.P.R. ANTIGEN STORED IN THE TROPICS (No. 1) AND WITH ANTIGEN STORED AT ROOM TEMPERATURE IN ENGLAND (No. 2)

Serum No.	P.P.R. Antigen (units)		Wassermann Reaction	Kahn Test
	No. 1	No. 2		
1	0	0	Negative	Negative
2	0	0	Negative	Negative
3	20	20	++	Positive
4	40	40	++	Positive
5	160	160	++	Positive

(2) In the second trial five antigens were used :

**Antigen 1.**—A sample of a batch of antigen (No. IV) prepared at the Royal Army Medical College in July, 1952, and stored in the dark at room temperature in the R.A.M. College laboratory.

**Antigen 2.**—A sample of the same batch (No. IV) stored at 4° C. for 7 days and refiltered in the cold before use.

**Antigen 3.**—A sample of the same batch (No. IV) stored in the incubator at 37° C. for 2 months.

**Antigen 4.**—A sample of the same batch (No. IV) which had been flown to the Andaman Isles in February, 1953, and used there routinely for 6 weeks, being stored in the dark at room temperature throughout this period.

**Antigen 5.**—A sample of a batch of antigen (No. 51/7) received in July, 1951, from the Venereal Diseases Reference Laboratory, Medical Research Council, and stored in the dark at room temperature in the R.A.M. College laboratory.

All the antigens were tested against pooled negative and positive sera and one positive cerebro-

\* Received for publication August 25, 1953.

spinal fluid, as shown in Table II, and no difference in reactivity could be detected between them.

TABLE II

RESULTS OF TESTING SEVEN POOLED SERA AND ONE C.S.F. WITH P.P.R. ANTIGEN STORED AT 4° C. (No. 2), AT 37° C. (No. 3), AND IN THE TROPICS (No. 4), AND WITH ANTIGEN STORED AT ROOM TEMPERATURE IN ENGLAND (Nos. 1 AND 5)

Serum No.	P.P.R. Antigen (units)					Wassermann Reaction	Kahn Test
	No. 1	No. 2	No. 3	No. 4	No. 5		
1	0	0	0	0	0	Negative	Negative
2	0	0	0	0	0	Negative	Negative
3	20	20	20	20	20	++	Positive
4	20	20	20	20	20	++	Positive
5	40	40	40	40	40	++	Positive
6	160	160	160	160	160	++	Positive
7	320	320	320	320	320	++	Positive
C.S.F.	160	160	160	160	160	++	.....

The antigens were diluted and all the tests set up according to the method of Price (1948), and the results were read independently by all three authors against a strip lamp using a hand lens ( $\times 6$ ).

### Summary

The results are shown of testing pooled negative and positive sera with the Price Precipitation Reaction (P.P.R.) for syphilis, using samples of antigen prepared at the Royal Army Medical College and stored both in Great Britain at temperatures ranging from 4° C. to 37° C. for periods of 1 week to 2 months, and at room temperature in the tropics for periods of 6 weeks to 6 months.

Samples of the standard antigen used in the Royal Army Medical College and of antigen obtained from the Venereal Diseases Reference Laboratory, Medical Research Council, both stored in the dark at room temperature (22° C.), were included as controls.

No single difference in reading was obtained with any of the antigens used.

From this it would appear that under the conditions of the experiments, *i.e.*, with the antigen kept in stoppered bottles in the dark, variation in the temperature of storage has no effect on the sensitivity of the antigen used in the Price Precipitation Reaction for syphilis.

We are indebted to the Director of Pathology, Army Medical Services, for permission to publish this article.

### REFERENCE

Price, I. N. Orpwood (1948). *J. clin. Path.*, 1, 91.