Evaluation of the Wampole Streptonase B Test

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The Streptonase B test was compared with the Center for Disease Control streptococcal anti-deoxyribonuclease B test. A total of 96% of anti-deoxyribonuclease B titers obtained with the Streptonase B test were within ± 1 dilution step of those obtained with the Center for Disease Control anti-deoxyribonuclease B test.

The anti-deoxyribonuclease B (ADN-B) test is valuable in the serological detection of group A streptococcal infections. As is true for the antistreptolysin O (ASO) test, the ADN-B test can aid a physician in diagnosing acute rheumatic fever and acute glomerulonephritis, which may follow streptococcal infections. In some instances, the ADN-B titer is elevated when the ASO titer is not, e.g., with acute glomerulonephritis resulting from streptococcal pyoderma (1). Until the Beckman ADN-B test was introduced and appropriate reagents thus became commercially available, the ADN-B test was used in only a few laboratories. Following up our previous report on the Beckman test (2), this report is an evaluation of the recently introduced Wampole Streptonase B ADN-B test.

Sixty human sera referred to our laboratory for streptococcal antibody tests were analyzed both with the Wampole Streptonase B ADN-B test and with the Center for Disease Control (CDC) ADN-B test (3). Both are neutralization tests, use the same buffered diluent solution, and require only 0.1 ml of serum for the initial serum dilution. Both tests use the CDC 60, 85 dilution scheme, with the dilution steps spaced evenly at 0.15-log intervals. Each tube of the Streptonase B test requires 0.2 ml of diluted serum, 0.2 ml of antigen, and 0.4 ml of substrate for a total volume of 0.8 ml per tube. The CDC test is carried out in microtitration plates and requires 0.025 ml of diluted serum, 0.025 ml of antigen, and 0.05 ml of substrate for a total volume of 0.1 ml per well. Incubation time and temperature requirements are 4 to 4.5 h at 37°C after the substrate is added for the Streptonase B test and 2.5 to 3 h at 45°C for the CDC test. The sera were stored at -20°C, and ten sera a day were tested for 6 days (six runs). A reference (control) serum of known titer was included in each run.

TABLE 1. *Comparison of Streptonase B test with CDC ADN-B test*

Test/titer comparisons	No.	%
Both tests: same titer	18	30.0
Streptonase B test: 1 dilution higher	20	33.3
Streptonase B test: 1 dilution lower	20	33.3
Streptonase B test: 2 dilutions higher	1	1.7
Streptonase B test: 2 dilutions lower	1	1.7

A comparison of the Streptonase B tube test and the CDC microtitration test results are presented in Table 1. The titers were the same with both tests for 18 (30%) specimens. The titers were 1 dilution interval higher with the Streptonase B test for 20 (33%) of the specimens and 1 dilution step lower for 20 (33%). The titers of the reference (control) serum included in each run were identical with both tests. The Streptonase B titers of 58 (96%) specimens were within ± 1 dilution interval of the titers obtained with the CDC ADN-B test, which indicates that the Streptonase B test is a satisfactory tube test for determining streptococcal ADN-B titers. As reported previously (2), the Beckman ADB test also agreed with the CDC test within 1 dilution interval for 96% of the specimens tested. Even though the Streptonase B tube test requires eight times the volume of reagents required by the CDC microtitration test, it meets the need of laboratories that perform only a few ADN-B tests or do not have microtitration equipment.

LITERATURE CITED

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