Modification of the Microtiter Reading Mirror for Use in the Standardized Micro Complement Fixation Test

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Modification of the Microtiter reading mirror used in the standardized diagnostic complement fixation method permits convenient estimation of the results in per cent hemolysis by direct visual comparison with the hemolytic standards.

Since the introduction of microtechnique to serological methods (1, 2), the Microtiter system (Cooke Engineering Co., Alexandria, Va.) has been widely used in serological investigations. The quantitative standardized diagnostic complement fixation method (LBCF; reference 3), commonly employed in the diagnosis of infectious diseases, has been adapted to the microtechnique. This complement fixation procedure was designed to use hemolytic standards for reading test results in per cent hemolysis by direct visual comparison. However, because the commercially available Microtiter reading apparatus does not allow such comparison of test results, investigators usually depend upon their arbitrary judgment to determine end points which they traditionally recorded as "plus values" (i.e., 4+, 3+, 2+, 1+, ±, −). These are less precise and less accurate than the readings against hemolytic standards normally used in the macrotest.

We found that the conventional Microtiter reading mirror (Cooke Engineering Co.), designed to read one Microtiter plate at a time, can be easily modified to accept two Microtiter plates, thereby permitting the side-by-side comparison of the complement fixation test with the hemolytic standards. This modification is shown in Fig. 1. The reading window is widened from 3.19 (8.1 cm) to 3.56 inches (9.05 cm), and the original aluminum Microtiter plate rails are replaced with a pair of 6.125-inch (15.65 cm) long custom-made, extended plate rails. The modification allows a

![Diagram showing the modification details and measurements of a microtiter reading mirror.](image)

![A typical microtiter complement fixation test plate as observed through a conventional microtiter reading mirror.](image)
second Microtiter plate, containing hemolytic standards to be placed on the same reading stand adjacent to the test plate for direct visual comparison. The advantage of using this modified Microtiter reading mirror is readily demonstrated by comparing Fig. 2 and 3 before and after the modification, respectively.

This modified reading mirror has been satisfactorily used in our laboratory for a period of 2 yr.

LITERATURE CITED