Calculation of Numbers of Streptococci in Latex Agglutination Swabs

A number of points are unclear to me in the article by Petts in the March 1984 issue of the Journal of Clinical Microbiology (1). The author made logarithmic dilutions of broth cultures of strains of streptococcal groups A, B, C, and G. On page 432, column 2, the number of CFU per cubic centimeter is stated. Swabs were charged with approximately 40 μl of each dilution, and an antigen detection assay was carried out. According to Petts, “these all gave positive reactions at dilutions of $10^{-2}$.” In the same paragraph, he states “the smallest number of streptococci detectable.” I have remade these calculations and fail to reach the same results (Table 1). I shall be grateful if this problem in a current and important area can be solved.

LITERATURE CITED


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Author’s Reply

I have now reexamined the notes and results of my original experiment. The number of CFU per cubic centimeter for each broth culture was as stated in the paper. It

<table>
<thead>
<tr>
<th>Strptococcal group</th>
<th>No. of CFU/cm³ in broth culture</th>
<th>No. of CFU at $10^{-2}$ dilution</th>
<th>No. of CFU per swab</th>
<th>No. of CFU stated by Petts</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>$20 \times 10^6$</td>
<td>$20 \times 10^2$</td>
<td>$2 \times 10^2$</td>
<td>$8 \times 10^3$</td>
</tr>
<tr>
<td>B</td>
<td>$90 \times 10^9$</td>
<td>$90 \times 10^9$</td>
<td>$9 \times 10^9$</td>
<td>$3.6 \times 10^9$</td>
</tr>
<tr>
<td>C</td>
<td>$30 \times 10^7$</td>
<td>$30 \times 10^7$</td>
<td>$3 \times 10^7$</td>
<td>$1.2 \times 10^7$</td>
</tr>
<tr>
<td>G</td>
<td>$50 \times 10^9$</td>
<td>$50 \times 10^9$</td>
<td>$5 \times 10^9$</td>
<td>$2 \times 10^9$</td>
</tr>
</tbody>
</table>

* Corresponding to 40 μl from a dilution of $10^{-2}$. 
would appear, therefore, that the figures I have given for the smallest number of streptococci detectable are incorrect. This is obviously my error and a mistake in my calculations, for which I apologize.

I am extremely grateful to Dr. Hoffman, not only for pointing out the error, but for taking the trouble to check the figures in this way.

This error also means that the number given in column 1, page 433, "10⁶ CFU of the streptococci," is incorrect. Perhaps this should now read "10⁵ CFU."

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