Dr. Joseph L. Melnick  
Baylor University College of Medicine  
Texas Medical Center  
Houston, Texas  

Dear Joe:

In accord with our conversation last week I have retitrated several small vials of the type 1, 2 and 3 vaccine that is stored in our deep freeze. Ten tubes were used per dilution and the calf serum was completely removed by a single washing of the tubes and then employing the lactalbumin hydrolysate medium in Earle's solution, without serum, gassed to about pH 7.5. All tubes were kept in roller drums after addition of the virus. The following titers were obtained:

Type 1 - $10^{7.9}$ TCD$_{50}$ per ml.  
Type 2 - $10^{7.3}$ TCD$_{50}$ per ml.  
Type 3 - $10^{7.2}$ TCD$_{50}$ per ml.

The titers obtained in December 1956 and subsequently on aliquots of the large pools of each of the 3 types are as follows:

<table>
<thead>
<tr>
<th>Type</th>
<th>Dec. '56</th>
<th>Nov. -Dec. '57</th>
<th>Oct. '58</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>7.6</td>
<td>7.4 - 7.6</td>
<td>7.9</td>
</tr>
<tr>
<td>II</td>
<td>7.7</td>
<td>7.2 - 7.4</td>
<td>7.3</td>
</tr>
<tr>
<td>III</td>
<td>7.9</td>
<td>7.0 - 7.5</td>
<td>7.2</td>
</tr>
</tbody>
</table>
The "yellow" ampules that you returned to me in dry ice were lemon yellow on thawing and I carried out a titration using 10 tubes per dilution as mentioned above. The titer was $10^{7.9} \text{TCD}_{50}$ per ml - identical with that obtained for the type 1 from ampules which were red on thawing.

With best wishes and kindest regards.

Sincerely yours,

Albert B. Sabin, M. D.