CARDIOLIPIN KOLMER TESTS ON PLASMA*

BY

ROGER D. COLEMAN†, HARRISON M. KURTZ, AND MILO D. APPLEMAN

Department of Bacteriology, University of Southern California, Los Angeles, California

In a letter to the Editor of this Journal, it has been stated that cardiolipin Kolmer tests are consistently anticomplementary when plasma is used in place of serum (Klein, 1956).

Since this test was not included in the paper criticized (Coleman, Appleman, and Kurtz, 1955), this report concerns our results using cardiolipin Kolmer antigen with serum and with plasma cleared of coagulated fibrinogen (Table).

**Method**

Potassium oxalate tubes were prepared according to previous publications (Coleman and Appleman, 1954). The tests were performed as described in the Manual of the U.S. Public Health Service (1955).

Blood specimens were collected in the usual manner from a prominent vein of the arm. A portion of the sample was allowed to clot in a clean, dry test-tube and the remainder was added to the tubes containing the anti-coagulant. The plasma was removed after a 5-min. period of centrifugation and then heated for 30 min. at 56° C. At the conclusion of the incubation period, each sample of plasma was centrifuged for 10 min. at 3,000 r.p.m. The supernatant, thus cleared of precipitated fibrinogen, was decanted into another tube and then employed as a serum would be in the various serodiagnostic tests.

This last step is the crux of the procedure. Plasmas used in serologic tests with the coagulated fibrinogen still present are usually completely unsatisfactory in flocculation procedures and are anticomplementary in complement-fixing procedures.

It is interesting to note that this critical step has been omitted from some of the abstracts of this work (Coleman and Appleman, 1955a, b, c).

**Results**

The results are summarized in the Table. It can be seen that there is no evidence of anticomplementary reactions in either the positive or the negative sera.

**Discussion**

It is apparent that cardiolipin Kolmer antigen functions as well as the lipidoid Kolmer antigen in tests using plasma. When such is not the case, there

<table>
<thead>
<tr>
<th>Case No.</th>
<th>Treated Cases</th>
<th>Negative Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serum</td>
<td>Plasma</td>
<td>Serum</td>
</tr>
<tr>
<td>1</td>
<td>44000000</td>
<td>44300000</td>
</tr>
<tr>
<td>2</td>
<td>42100000</td>
<td>21000000</td>
</tr>
<tr>
<td>3</td>
<td>44410000</td>
<td>44440000</td>
</tr>
<tr>
<td>4</td>
<td>44400000</td>
<td>44410000</td>
</tr>
<tr>
<td>5</td>
<td>44400000</td>
<td>44410000</td>
</tr>
<tr>
<td>6</td>
<td>44440000</td>
<td>44444000</td>
</tr>
<tr>
<td>7</td>
<td>00000000</td>
<td>00000000</td>
</tr>
<tr>
<td>8</td>
<td>44444400</td>
<td>44444410</td>
</tr>
<tr>
<td>9</td>
<td>21000000</td>
<td>20000000</td>
</tr>
<tr>
<td>10</td>
<td>40000000</td>
<td>40000000</td>
</tr>
<tr>
<td>11</td>
<td>41000000</td>
<td>41000000</td>
</tr>
<tr>
<td>12</td>
<td>44444400</td>
<td>44444400</td>
</tr>
<tr>
<td>13</td>
<td>21000000</td>
<td>31000000</td>
</tr>
<tr>
<td>14</td>
<td>00000000</td>
<td>20000000</td>
</tr>
<tr>
<td>15</td>
<td>44444400</td>
<td>44444400</td>
</tr>
<tr>
<td>16</td>
<td>44000000</td>
<td>42100000</td>
</tr>
<tr>
<td>17</td>
<td>10000000</td>
<td>10000000</td>
</tr>
<tr>
<td>18</td>
<td>44410000</td>
<td>44400000</td>
</tr>
<tr>
<td>19</td>
<td>40000000</td>
<td>40000000</td>
</tr>
<tr>
<td>20</td>
<td>33210000</td>
<td>21000000</td>
</tr>
<tr>
<td>21</td>
<td>20000000</td>
<td>20000000</td>
</tr>
<tr>
<td>22</td>
<td>44400000</td>
<td>44400000</td>
</tr>
<tr>
<td>23</td>
<td>21000000</td>
<td>21000000</td>
</tr>
<tr>
<td>24</td>
<td>32100000</td>
<td>10000000</td>
</tr>
<tr>
<td>25</td>
<td>20000000</td>
<td>20000000</td>
</tr>
<tr>
<td>26</td>
<td>21000000</td>
<td>21000000</td>
</tr>
<tr>
<td>27</td>
<td>21000000</td>
<td>21000000</td>
</tr>
<tr>
<td>28</td>
<td>40000000</td>
<td>40000000</td>
</tr>
<tr>
<td>29</td>
<td>44444442</td>
<td>44444444</td>
</tr>
<tr>
<td>30</td>
<td>00000000</td>
<td>00000000</td>
</tr>
<tr>
<td>31</td>
<td>00000000</td>
<td>00000000</td>
</tr>
<tr>
<td>32</td>
<td>21000000</td>
<td>43100000</td>
</tr>
<tr>
<td>33</td>
<td>00000000</td>
<td>32100000</td>
</tr>
<tr>
<td>34</td>
<td>00000000</td>
<td>20000000</td>
</tr>
<tr>
<td>35</td>
<td>44444442</td>
<td>44444444</td>
</tr>
<tr>
<td>36</td>
<td>00000000</td>
<td>00000000</td>
</tr>
<tr>
<td>37</td>
<td>10000000</td>
<td>00000000</td>
</tr>
<tr>
<td>38</td>
<td>00000000</td>
<td>00000000</td>
</tr>
<tr>
<td>39</td>
<td>00000000</td>
<td>20000000</td>
</tr>
<tr>
<td>40</td>
<td>43210000</td>
<td>43210000</td>
</tr>
<tr>
<td>41</td>
<td>00000000</td>
<td>21000000</td>
</tr>
<tr>
<td>42</td>
<td>42100000</td>
<td>42100000</td>
</tr>
<tr>
<td>43</td>
<td>44400000</td>
<td>44400000</td>
</tr>
<tr>
<td>44</td>
<td>42200000</td>
<td>42200000</td>
</tr>
<tr>
<td>45</td>
<td>40000000</td>
<td>40000000</td>
</tr>
<tr>
<td>46</td>
<td>20000000</td>
<td>20000000</td>
</tr>
<tr>
<td>47</td>
<td>44400000</td>
<td>44444000</td>
</tr>
</tbody>
</table>

* Received for publication August 11, 1956.
† Present address: Long Beach Clinical Laboratory, 806 Security Building, Long Beach 2, California.
is usually a reason. In some cases brought to our attention, workers in the field neglected to read the instructions carefully, particularly the point at which the fibrinogen is sedimented after the incubation period. Other instances occurred when abstracts of the original articles that did not mention or make clear this significant step were used as guides.

This demonstrates some scientific principles with which we all are familiar, yet it is good to refresh our memories on occasion. Abstracts should only be used as guides to determine whether we want to read the original article. If the subject is still of interest, then the original should be sought out.

Techniques and tests reported in a paper should be followed implicitly. It is unsound to infer that a similar technique or related test can be substituted.

Criticism is vital to science and should be encouraged; however, that criticism itself must be scientific and adhere to basic rules.

**Summary**

(1) When blood treated with potassium oxalate is employed in the performance of the Kolmer test, the cardiolipin antigen may be used with as much success as has been previously shown using the lipoidal antigen.

(2) As in all serologic tests for syphilis employing plasma in place of serum, the fibrinogen, precipitated by heating in the water bath, must be removed by centrifugation before the tests are performed.

The authors are indebted to the Health Department, Los Angeles City, and to the South-east District Health Center where patients were made available for study.

**REFERENCES**


Cardiolipin Kolmer Tests on Plasma

Roger D. Coleman, Harrison M. Kurtz and Milo D. Appleman

*Br J Vener Dis* 1956 32: 261-262
doi: 10.1136/sti.32.4.261

Updated information and services can be found at:
http://sti.bmj.com/content/32/4/261.citation

**Email alerting service**

Receive free email alerts when new articles cite this article. Sign up in the box at the top right corner of the online article.

**Notes**

To request permissions go to:
http://group.bmj.com/group/rights-licensing/permissions

To order reprints go to:
http://journals.bmj.com/cgi/reprintform

To subscribe to BMJ go to:
http://group.bmj.com/subscribe/