Table 3. Ca Contamination in Vacutainer Tubes with or without Stopper

<table>
<thead>
<tr>
<th>Type of &quot;elution&quot;</th>
<th>Red-cap, 10 ml</th>
<th>Silicon'd., cat. no. 4708 (2200TG)</th>
<th>Glyc'd., cat. no. 4710</th>
<th>Pink-cap, 10 ml, cat. no. 4719 (2200NT)</th>
<th>Orange-green cap, 10 ml, cat. no. 4707</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Elution&quot; with stopper</td>
<td>1.9 (1.3-2.6) (20)</td>
<td>2.1 (1.2-3.2) (20)</td>
<td>1.2 (0.8-1.5) (10)</td>
<td>0.9 (0.8-1.1) (10)</td>
<td></td>
</tr>
<tr>
<td>&quot;Elution&quot; with Parafilm</td>
<td>0.7 (0.5-1.1) (10)</td>
<td>0.8 (0.7-1.4) (10)</td>
<td>0.6 (0.5-0.9) (10)</td>
<td>0.5 (0.4-0.7) (10)</td>
<td></td>
</tr>
</tbody>
</table>

* In µg calcium per tube. Numbers are mean, range, and number of tubes analyzed, in that order.

Pasteur pipets (used in handling serum for Ca determination) were negligibly contaminated.

Although contamination of Vacutainers with calcium causes serious error only if the tubes are not sufficiently filled with blood (or if used repeatedly for serum transfer), Natelson pediatric micro blood tubes could cause more serious errors—as much as 0.4 mg/100 ml difference in the apparent serum calcium—because of the limited volume (Table 1). In comparison, plain "trident" microtubes (Aloe) averaged less contamination.

Mg contamination averaged 0.025 or less that of the average calcium; therefore, it could be ignored. Li contamination was practically nonexistent.

We conclude that Ca error is diminished if Vacutainers are properly filled with blood and acid-washed glassware is used for transfer. For pediatric blood collection, Caraway plain microtubes (Aloe) seem satisfactory.

References


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Editor's Note: A Letter on this subject also appeared in our January issue [CLIN. CHEM. 17, 61 (1971)].

**Temperature Control on AutoAnalyzer II**

*To the Editor:*

On Technicon's AutoAnalyzer II glucose module, there is no direct control of the temperature of dialysis. The need for temperature control was demonstrated by Grady and Lamar [CLIN. CHEM. 5, 542 (1959)].

The dialysis temperature of the AutoAnalyzer II is controlled by the balance of heat produced by the heating block within the module and the loss of heat to the surroundings through the partly covered top portion of the module. In an ambient temperature of between 24° and 25°C, it required at least 2 h to reach a steady temperature of 31° to 32°C under the acrylic cover of the top portion of the module. During the first 68 min of one warm-up period, the air temperature at the dialyzer block reached 26.5°C. During the next 32 min, the temperature rose to 28.6°C. During this time, the absorbance of an aqueous standard increased 10% without a change in absorbance of the reagent blank.

If, after temperature equilibrium is reached, the acrylic cover of the unit is removed, absorbance decreases along with the temperature drop. Good stability could be obtained by operating the module with the cover off, because room temperature was relatively constant.

In the Technicon SMA 12/60, a very similar module uses a 37°C predialysis...
heating block. The vertical configuration of the dialyzer block probably also results in a more rapid temperature equilibration, owing to vertical air flow from the underlying heating units.

It would appear that until a more effective means of temperature control is available, frequent drift control standards are indicated in glucose determinations on the AutoAnalyzer II.

Albert L. Chasson
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Influence of Antibiotics on Laboratory Tests

To the Editor:

There is controversy about the influence of drugs on various laboratory tests (1, 2). Antibiotics, among the most frequently used drugs, could interfere with many tests.

To aliquots of a normal serum pool, weighed amounts of individual antibiotics were added (Table 1) and tested in triplicate by use of the SMA 12/60 (3). The drug concentrations represent approximate therapeutic serum concentrations, as calculated from manufacturers' information.

The results for none of the 12 tests (calcium, inorganic phosphorus, glucose, urea nitrogen, uric acid, cholesterol, total protein, albumin, total bilirubin, alkaline phosphatase, SGOT, and LDH) were altered by the drugs themselves or by the additives that the manufacturers used as antioxidants and preservatives. Since the antibiotics were tested in approximate therapeutic concentrations, it can be assumed that these same drugs administered to patients do not inter

<table>
<thead>
<tr>
<th>Drug</th>
<th>Concentrations&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methicillin, sodium</td>
<td>8</td>
</tr>
<tr>
<td>Oxacillin, sodium</td>
<td>8</td>
</tr>
<tr>
<td>Streptomycin sulfate</td>
<td>50</td>
</tr>
<tr>
<td>Kanamycin sulfate</td>
<td>25</td>
</tr>
<tr>
<td>Cephalothin, sodium</td>
<td>20</td>
</tr>
<tr>
<td>Chloramphenicol, sodium succinate</td>
<td>10</td>
</tr>
<tr>
<td>Penicillin-G, sodium</td>
<td>300 units/ml</td>
</tr>
<tr>
<td>Tetracycline hydrochloride</td>
<td>5</td>
</tr>
<tr>
<td>Ampicillin, sodium</td>
<td>8</td>
</tr>
<tr>
<td>Lincomycin hydrochloride</td>
<td>12</td>
</tr>
<tr>
<td>Erythromycin lactobionate</td>
<td>50</td>
</tr>
<tr>
<td>Colistin, sodium dibucauce hydrochloride</td>
<td>4</td>
</tr>
<tr>
<td>Gentamicin sulfate</td>
<td>0.2</td>
</tr>
</tbody>
</table>

<sup>a</sup> In μg/ml, except as noted.

DIGITOXIN ANTIBODY

FOR THE DETERMINATION OF THERAPEUTIC AMOUNTS OF

DIGITOXIN IN 0.25 ML OF SERUM

AN INVITRO RADIOIMMUNOASSAY USING <sup>3</sup>H-DIGITOXIN

$15/vial

Each vial provides enough solution for 100 assay tubes. A complete suggested procedure for the determination of Digitoxin in serum accompanies each vial.

Anti-Digoxin Antibody also available.

Technical data furnished upon request.

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