One of the authors of this paper responds:

To the Editor:

I read with interest the comments of Dr. Dodds (Boehringer Mannheim Diagnostics, Inc.) concerning the evaluation of the M System analyzer by myself and my colleagues (1). The evaluation was carried out on behalf of the British Department of Health and Social Security (DHSS), and I believe that Dodds’ prompt and pertinent letter demonstrates the close collaboration that is typical of such evaluations. When the DHSS invites a laboratory to carry out an evaluation, it is done with the complete cooperation of the manufacturer, the laboratory, and the DHSS. The aims and procedures are clearly defined and agreed at the outset. A very detailed report (2) is produced for the DHSS, which is seen by the manufacturer, who is invited to make his own brief comment, prior to its publication. Any further publication such as the one in this journal (1) can only be a resume of the work carried out.

The success of this approach lies in the close cooperation that exists, which is why Boehringer Mannheim Diagnostics, Inc., are able to reply so effectively to the criticisms made in our evaluation. I should, however, like to pursue two points made in Dodds’ Letter.

Firstly, he refers to the low concentration of sodium and potassium in one of our pools and states that this is below the claimed lower acceptable measurable range. This is correct, as the low end of the range was set at 120 mmol/L and 2.0 mmol/L for sodium and potassium, respectively, and our lowest pool had values below this. However, we felt these cutoff values were not clinically acceptable and thus justified our investigations at lower concentrations.

Secondly, I wholly accept Dodds’ comments concerning the inappropriately low concentration of some other analytes in some pools; he particularly mentions triglyceride concentration and UIBC level. DHSS evaluations aim at determining precision at high, medium, and low concentrations (or activities) for each analyte, these values being defined so that they cover both the reference interval and significant pathological values. Unfortunately, it is not always possible to have control material that covers all of these values for all analytes; this is particularly difficult for a multichannel instrument. Consequently, a compromise is reached, and in this particular case triglyceride and UIBC were most affected.

References

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Improved Determination of Inorganic Phosphate with the ABA-100 Bichromatic Analyzer

To the Editor:

I adapted the method of Bartels and Roijers (1) for inorganic phosphate in serum for use with Abbott Laboratories’ ABA-100 Bichromatic Analyzer.

Reagents, prepared from analytical-grade chemicals, were stable for at least six months at room temperature. They are:

1. Catalyser reagent. Dissolve 27 g of polyvinylpyrrolidone, 1.2 mL of Triton X-100, and 1.0 g of sodium azide in distilled water, and dilute to 1 L.
2. Acid molybdate reagent. Dissolve 3.4 g of ammonium molybdate hexahydrate in about 100 mL of distilled water. Add 65 mL of concentrated sulfuric acid. Cool to room temperature and dilute to 250 mL with distilled water.
3. Reducing agent. Dissolve 5.0 g of o-phenylenediamine dihydrochloride and 3.6 g of thiourea in distilled water, and dilute to 50 mL.
4. Working reagent. Just before use, mix 5.0 mL of reagent 1 with 1.0 mL of reagent 2 and 0.2 mL of reagent 3. This reagent is stable for 2 h at room temperature or 12 h at 4°C.

ABA-100 settings:

Power ................. ON
Incubator ............. 30°C
Mode selector .......... Endpoint
Reaction direction ...... Down
Analysis time .......... 5 min
Carousel revolutions ... 2
Filters ................. 50/650
Syringe plate .......... 1.51
Sample size ............ 5 uL
Decimal setting .......... 0.000
Calibration factor ........ Concn of std
Zero .................. 0

Results by this method were compared with those by the method of Goldberg and Fernandez (2). Routine serum samples were analyzed by both methods and the results were compared statistically by linear regression analysis. The correlation coefficient was 0.994, and the two methods were related by the equation y = 0.9x + 0.17 (y, ABA-100; x, Goldberg/Fernandez).

The method has performed satisfactorily for the past two years. The mean CV for cumulative quality-control data is 5.5%.

References

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Misunderstanding Corrected

To the Editor:

We wish to point out an apparent error in Lutz’s Letter (Clin. Chem. 28: 1830, 1982). Contrary to the statement, we gave no examples of, nor offered any explanation for, LD-1/LD total ratios greater than unity. Indeed, we have never seen this result and we see no explanation for such an observation other than experimental error. We mentioned antigen excess only in relation to its effect on the linear limit of the method. We do not wish it perceived by the casual reader that we rejected results on this basis.

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Simplified Measurement of Polyethylene Glycol 400 in Urine

To the Editor:

Polyethylene glycol (PEG 400) has been used as a probe to study intestinal permeability in man (1, 2). It is not degradable by intestinal bacteria, an advantage over substances such as mannitol (3), urea (3), xylose (4), and creatinine (5). It is a mixture of at least nine polymers, ranging in mass from 238 to 590 daltons.

Chadwick et al. (1) developed a gas chromatographic procedure for measuring the individual fractions of PEG 400 in the form of their acetyl derivatives. Recently, gas chromatography of