molysis, to rule out the possibility of excess turbidity in the blank caused by precipitation of an abnormal gamma globulin. The test is performed by simply adding a drop of the serum to a tube containing about 1 mL of distilled water. When positive, a flocculent precipitate appears at once.

Reference

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A spokesman for the manufacturer of one of the analyzers comments:

To the Editor:
We do not disagree with the premise of Tokmakjian et al., but would like to point out some features of the Dacos® and Dacos XL Chemistry Analyzer System that were designed to limit but not necessarily completely eliminate interferences due to induced turbidities by abnormal gammopathies. The Dacos system does not use water as the serum diluent, but rather uses a hypotonic salt solution with an added surfactant designed to prevent normal and some hyperabnormal concentrations of protein from precipitating during analysis. In those very high concentration samples in which precipitation occurs, the system's software will identify fluctuating blank readings with a "fail" code; if the blank produces unstable readings, kinetic reactions will also show a "fail" code, but not for stable but high blank readings. In a case such as that reported above, the abnormal proteins apparently precipitated immediately upon sample dilution, and, by the time the blank was read, presented a stable turbidity. Virtually no automated chemistry analyzer can detect such an instance.

We have recognized this potential analytical problem, and, since 1984, our product insert for the Dacos Diluent A + B has contained a specific statement to this effect under "Interferences and Limitations."

The suggestion that suspect samples be pre-screened for macroglobulinemias may be a valuable aid in preventing this type of analytical problem.

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Erythrocyte Protoporphyrins In Normal Infants

To the Editor:
In connection with the Copenhagen Study of Infant Nutrition and Growth, we studied the cutoff concentration of erythrocyte protoporphyrins that has been proposed for screening for iron deficiency (1). We found a substantial, not previously reported age-dependent variation of erythrocyte protoporphyrins during the first year of life, with a mean concentration at six months (both sexes) that is significantly lower than that at two and nine months, and without corresponding fluctuation of hemoglobin concentrations. The children studied were all born at term, with a normal birth weight for gestational age. They were singletons with Danish parents and no neonatal illness.

Total erythrocyte protoporphyrins were quantified with a Hitachi F-1000 fluorescence spectrophotometer (Merck, Darmstadt, F.R.G.), after extraction with ethanol and acetone followed by acidification with propylene glycol/HCl (2); the excitation wavelength was 405 nm, and fluorescence was measured at 605 nm. For calibration we used a coproporphyrin fluorescence standard (no. CFS-3; Porphyrin Products, Logan, UT 84321), 25 μg/L, diluted in a medium identical to what was obtained after extraction and acidification of the samples. Protoporphyrin (562 Da) concentrations were expressed as nanomoles of coproporphyrin equivalents per liter of erythrocytes (coproporphyrin equivalents per liter of whole blood divided by the corresponding hemoglobin values). All samples were assayed in duplicate (CV <5%). Venous blood samples were drawn into EDTA-containing tubes in connection with clinical examination when the infants were two months (mean 61 days, SD 2.6 days), six months (mean 186 days, SD 7.3 days), and nine months (mean 280 days, SD 10.5 days) old.

At the age of two months, 65 infants (38 girls, 27 boys) showed a mean erythrocyte protoporphyrin concentration of 679 nmol/L (SD 185) [girls: 642 nmol/L (SD 187), boys: 781 nmol/L (SD 200)]. Their corresponding mean hemoglobin concentration (n = 64) was 7.18 mmol/L (SD 0.51).

At the age of six months, the erythrocyte protoporphyrin concentration reached its minimum value (475 nmol/L, SD 106; n = 48), significantly lower (P < 0.001) than that for the two- or nine-month-old infants, and lower (P < 0.05) in girls (449 nmol/L, SD 104; n = 29) than in boys (516 nmol/L, SD 106; n = 19). The mean hemoglobin concentration for these infants was 7.22 mmol/L (SD 0.57; n = 48).

At the age of nine months, the protoporphyrin concentration was 556 nmol/L (SD 133; n = 83), with no difference between girls (556 nmol/L, SD 125; n = 48) and boys (556 nmol/L, SD 145; n = 35). Their corresponding mean hemoglobin concentration was 7.24 mmol/L (SD 0.48; n = 83).

Twenty-six infants (19 girls, seven boys) participated in all three examinations. Figure 1 shows the changes in erythrocyte protoporphyrin concentrations of these individual infants, who also showed significantly lower (P < 0.001, paired t-tests) mean protoporphyrin concentrations at the age of six months (468 nmol/L) than at the age of two (691 nmol/L) and nine months (556 nmol/L). As illustrated, the children with a low (or a high) value tended to show a low (or respec-