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Rapid Colorimetric Determination of Calcium in Biologic Fluids with Methylthymol Blue

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Abstract

Gindler, E. Melvin, and King, John D.: Rapid colorimetric determination of

calcium in biologic fluids with methylthymol blue. *Am. J. Clin. Pathol.* 58: 876–382, 1972. A simple and rapid colorimetric method of determining calcium concentration, based on methylthymol blue, is described. Serum proteins and sizable concentrations of phosphate, magnesium, and bilirubin do not interfere significantly. Sensitivity is sufficient to permit ultramicro application, and the color of the calcium-dye complex is completely stable for several hours. The procedure involves no deproteinization, and can be completed within five minutes after serum or plasma have been obtained, and is equally applicable to routine and to “stat” requests. Two simple stock solutions are mixed together in equal volumes to form a working reagent, which, when added to the specimen, gives a blue color with calcium. Absorbance follows Beer’s law at calcium concentrations as high as 12.5 mg. per 100 ml. The results agree closely with those of Gitelman’s o-cresolphthalein complexone (SMA 12/60) procedure, and good accuracy has been shown by recovery data.

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