



Modification of the Methylthymol Blue Method to Adapt it to the Measurement of Calcium in Waters[#]

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Abstract: This method is used to determine the level of calcium in biological fluids, mainly in blood serum and urine. Calcium present in the analytical sample reacts with methylthymol blue in alkaline environment, giving a stained preparation, which has a maximum absorption at 610 nm wave length (red part of the visible spectrum). This method was adapted to determine the concentration of calcium in water samples. Measuring the concentration of calcium in water samples is important because the chemical "hardness" of water depends on its concentration. Modifications made to the method are:

- Volume of analytical material was increased from 10 µl to 20 µl.
- Time of incubation was increased from 2 to 5 minutes.
- The temperature of incubation was increased from 18-25 ° C to 37 ° C.
- The analysis factor was issued with standard calcium of concentration 5mg/dl.

The concentration of standard in kits for determination of calcium in biological fluids is 10 mg / dl. After modification of the method, measurement of calcium was carried out in several water samples, specifically in market distilled water, distilled water for injections and tap water. The data obtained proved that the modified method has good sensitivity and precision.

Keywords: *Calcium, hard water, incubation time and temperature, methylthymol blue method, sample volume.*

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