

# AUTOMATED SERUM ALBUMIN DETERMINATION BASED ON THE REACTION WITH PICRATE IONS USING A FLOW THROUGH PICRATE ION ELECTRODE

E.P.Diamandis, D.S.Papastathopoulos and T.P.Hadjiloannou

Laboratory of Analytical Chemistry, University of Athens, Athens, Greece

The main source of human albumin is the liver and disease of this organ leads to abnormally low serum albumin concentrations. In nephrosis, serum albumin concentration is lowered because of massive losses through the kidneys. Many methods have already been described for serum albumin determination, several of them based on dye-binding reactions<sup>(1,2)</sup>.

We have attempted to assess the suitability of the reaction between serum albumin and picrate ions for the measurement of albumin in serum. The continuous flow system used consisted of the Technicon Autoanalyzer II sampler and proportioning pump, and a specially designed flow-through picrate ion electrode<sup>(3,4)</sup>.

Various parameters of the reaction, such as pH, picrate ion concentration, reaction time etc., were studied. There was a direct linear relationship between peak height and albumin concentration in the range 0.5-7g/100 ml. The within run and day to day precision of the method was about 2%. The recovery of albumin added to serum samples ranged from 95.5 to 106.0% with an average of 102.6%. Comparison of the obtained results with those obtained with the standard bromocresol green method gave the equation:  $y = 0.956x + 0.035$  with a corr. coeff. of 0.902 (n = 138). In conclusion, the proposed automated method for the serum albumin determination can be considered suitable for routine clinical measurements and screening tests.

## References

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