

Cloud point extraction and preconcentration of Methylene blue

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Abstract In this research, cloud point was examined for extraction and determination of methylene blue aqueous samples. The advantages of this technique are simple, rapid, low cost, and little and finally consumption of organic solvent and environmentally friendly. Cloud point method has been successfully employed for the simultaneous extraction and preconcentration of trace amounts of methylene blue dye. The extraction of methylene blue aqueous samples was performed in the presence of as a non-ionic surfactant. Phase separation occurred upon heating to . Methylene blue was preconcentrated into small volume of the surfactant-rich phase. After centrifuge, the surfactant-rich phase was diluted with concentrated ethanol and absorbance was measured at $\lambda_{\max} = \text{nm}$ by spectrophotometry. The different variables affecting the complexation and extraction conditions were optimized. Under the optimum conditions (i.e. pH=6, 0.7% (w/v) of , 0.05 mol L⁻¹ of NaCl, 1.7 ml of ethanol, the calibration curve was linear in the range of mgL⁻¹ ($r^2 > 0.9$) with detection limit 0.04 mgL⁻¹ of Methylene blue. Also the precision (%RSD) for six replicate determinations of methylene blue was better than 1.69%. Finally, the applicability of the proposed method was successfully confirmed by preconcentration and determination of trace amounts of in water samples and satisfactory results were obtained.

Keywords : Condensed placid blue

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