



## **A colorimetric analysis for determination of sodium ion in urine samples**

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Simple and cost-effective method was developed for determination of sodium ion in urine samples. Sodium ion analysis in urine can be used to diagnose or monitor many types of kidney diseases. Potassium hexahydroxoantimonate ( $\text{K}[\text{Sb}(\text{OH})_6]$ ) was used as reagent for the detection of sodium ion. White precipitate was obtained from reaction of  $\text{K}[\text{Sb}(\text{OH})_6]$  and sodium ions. The transparency intensity was monitored by a mobile phone camera and used for quantitative analysis. The conditions for sodium ion in urine analysis were studied. The developed method provided an appropriate working range from 0.1-0.5 M with  $r^2$  of 0.99. Sodium ion level in urine samples obtained from the developed method was compared that of an ion chromatography. The developed method shows advantages in terms of portability and disposability.

**Keywords:** Colorimetry; Phone-camera detection; Potassium hexahydroxoantimonate; Urine sample.