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Chromatographic Separation and Identification of Human Urine Components*

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We reported previously the analysis of ultraviolet (UV) -absorbing compounds in human urine by means of high-performance liquid chromatography (HPLC) using the column of macroreticular anion exchange resin (Diaion CDR-10) maintained at 60 °C. The method is expected to find its place among routine analytical methods of human urine applicable to diagnostic purpose. In the study, the chromatographic peaks were assigned by the comparison of the retention times with the authentic samples. For further studies, the separation and identification of the urine components are required.

The peak fractions were collected with a large scale column (250 × 28 mm I.D. stainless-steel) of Diaion CDR-10. The sample was eluted with a linear gradient of 0.006 M to 6.0 M ammonium acetate buffer (pH, 4.40) and the eluates corresponding to several peaks were collected. The reversed phase HPLC of fractions showed that they were almost free of UV-absorbing contaminants. A compound purified from a fraction was subjected to spectral studies. Its UV, infrared and mass spectral data were almost superimposable to those of the authentic sample of uric acid. Thus the compound was identified as uric acid.

The fractionation through HPLC with a large scale column, the purification and the identification by physicochemical means were successful for human urine components.

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