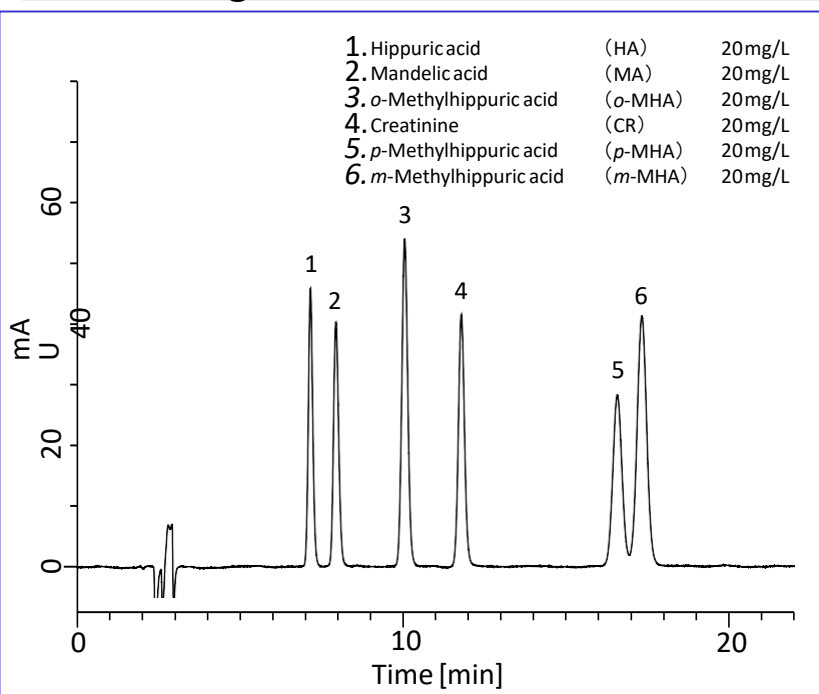


Analysis of Hippuric Acid in Urine by HPLC

Hippuric acid, methylhippuric acid, and mandelic acid are major urine metabolites of aromatic organic solvents (e.g. toluene, xylene, and styrene). Their amounts in urine are most widely used as an indicator of the organic solvent exposure. This note describes a simultaneous determination method for the urinary metabolites and creatinine.

The separation is usually performed with ODS columns

A chromatogram obtained from standard solution



Conditions

System : GL-7400 HPLC system

Column : Inertsil ODS-80A
(5 μ m, 250 x 4.6 mm I.D.)
Cat.No. 5020-01602

Eluent : A) 2-propanol
B) 10 mM phosphate buffer (pH 2.5) containing 2 mM sodium 1-nonanesulfonate A/B = 10/90, v/v
(Mixed by a gradient mixer)
: 1.0 mL/min

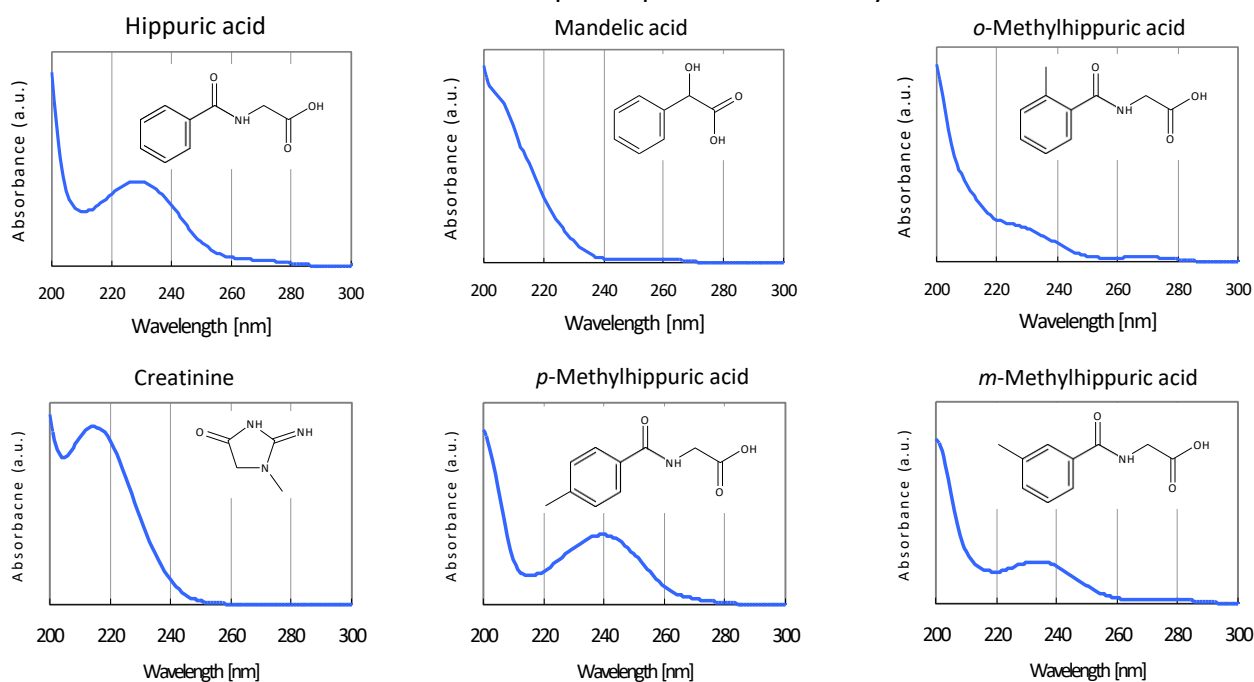
Flow rate

Col. Temp. : 40 $^{\circ}$ C

Detection : PDA 210 nm

Inj. Vol. : 10 μ L

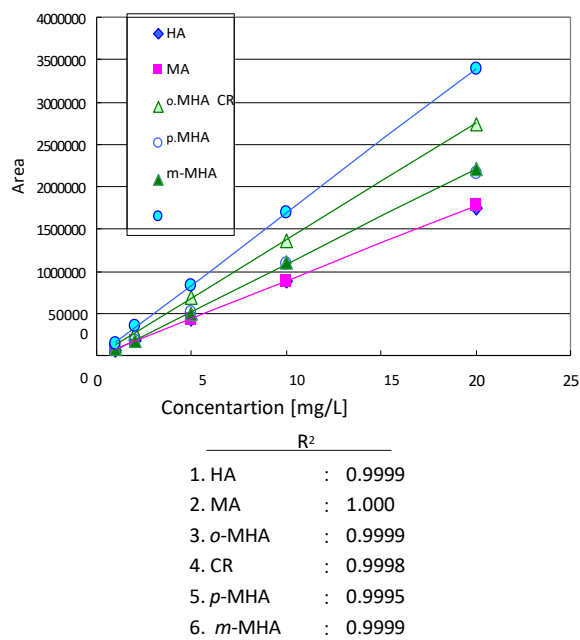
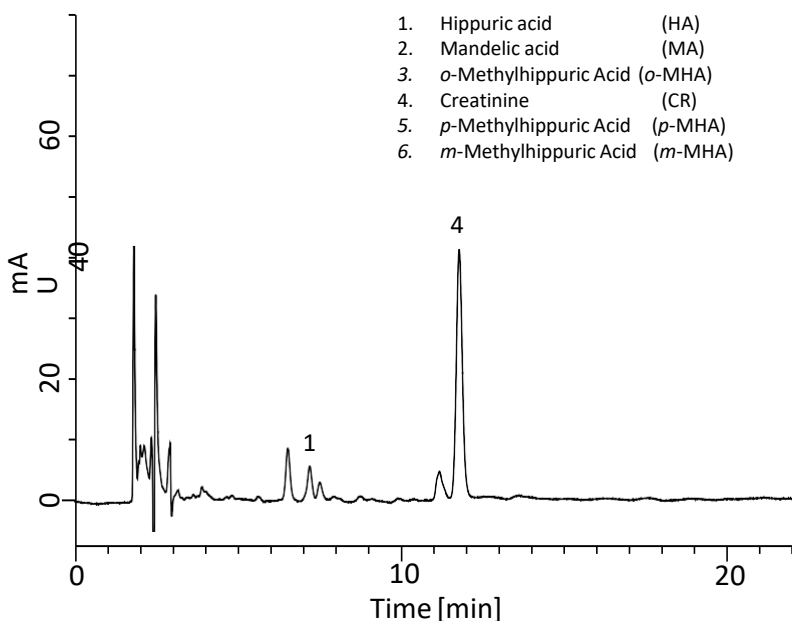
The chemical structures and the absorption spectra obtained by PDA



An analysis of human urine sample

After 100-fold dilution with water, the sample was filtrated using a 0.45 μm -membrane filter.

The filtrate was injected into the HPLC system.



The calibration curves and their correlation coefficients

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