

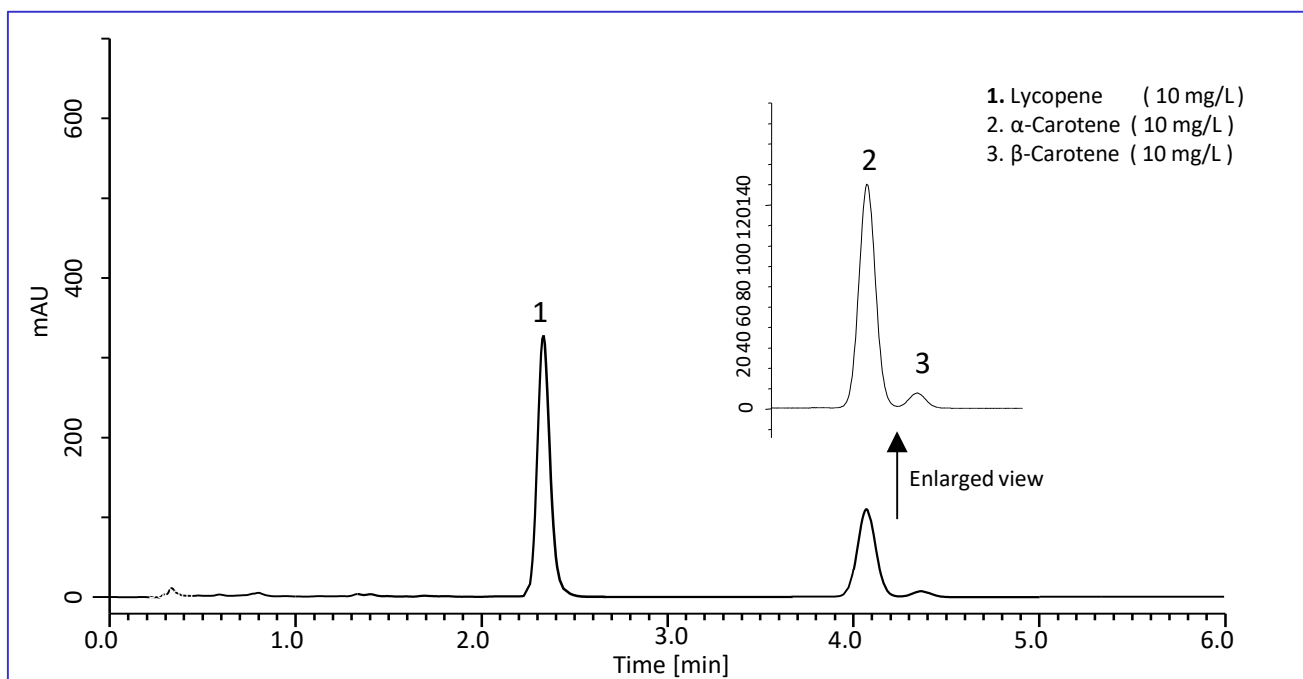
Analysis of Lycopene in Food by HPLC

Lycopene is a type of carotenoid. It is found in red fruits and vegetables such as tomatoes, and known to have strong anti-oxidative effect. This note describes a determination method for lycopene in food samples using an HPLC system. In this method, not only retention time of lycopene but also those of α -carotene and β -carotene were determined.

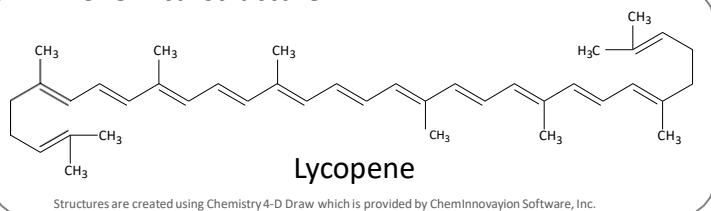
The sample pretreatment is consisted of only liquid extraction and centrifugation. For the HPLC separation, 50 mm length Inertsil ODS-3 column packed with 2 μ m particle was used. As a result, sharp peaks were obtained from standard solution and food samples within 5 min under lower pressure than 15 MPa (150 bar).

(K. Suzuki)

A Chromatogram Obtained from Standard Solution



Chemical structure



Conditions

Column : Inertsil ODS-3
(2 μ m, 50 x 3.0 mm I.D.)
Cat.No. 5020-84662

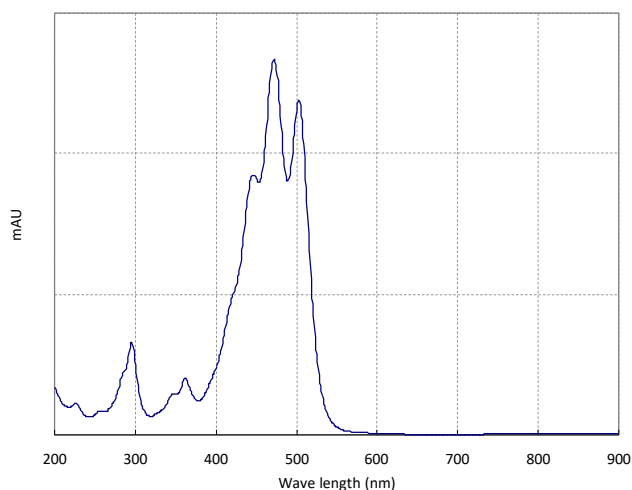
Eluent : CH₃CN

Flow rate : 1.2 mL/min (Approx. 14 MPa)

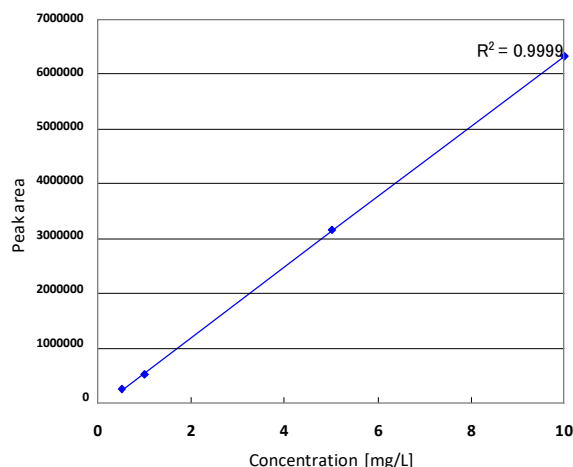
Col. Temp. : 45 °C

Detection : PDA 470 nm

Inj. Vol. : 20 μ L



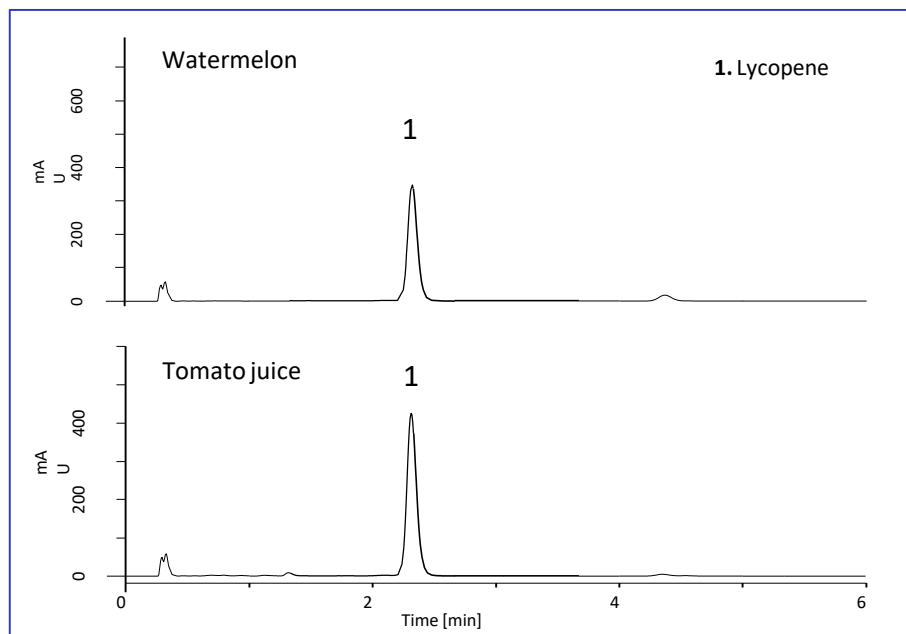
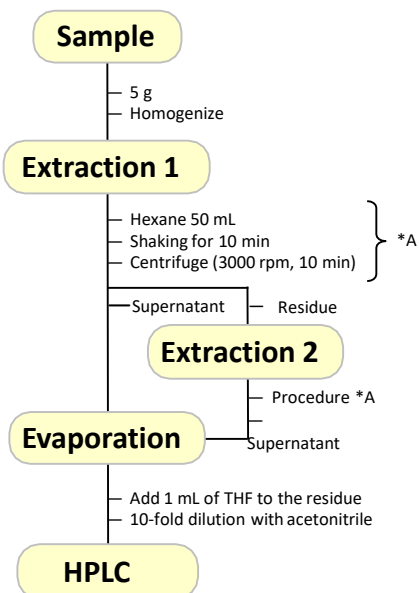
Absorption spectrum of lycopene



Calibration curve for lycopene

Chromatograms Obtained from Food Samples

An Example of Sample Pretreatment



If high recovery ratio is required, not single but multiple extraction (procedure *A) should be carried out.

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