

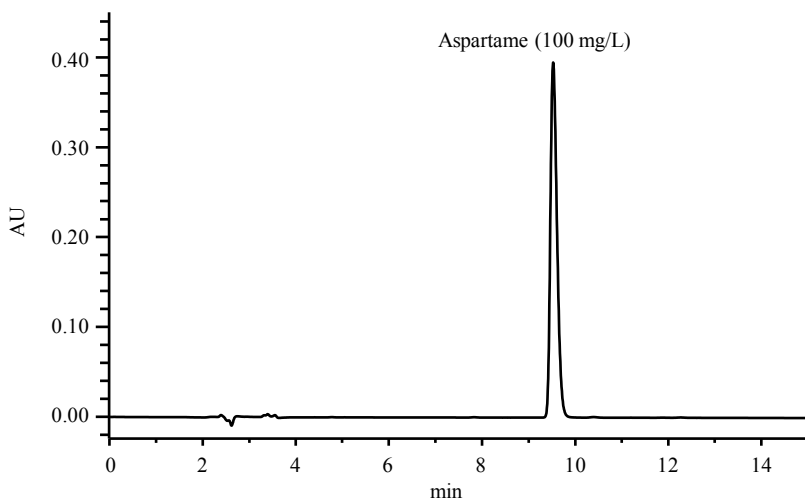


## Analysis of Artificial Sweeteners

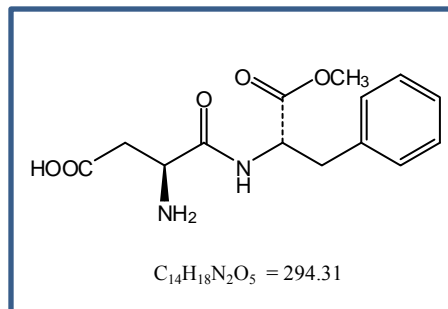
Aspartame is an artificial sweetener that is 100 to 200 times sweeter than sucrose. It is a dipeptide formed by peptide bonding of methyl ester of phenylalanine with aspartic acid. Aspartame is mainly added to low calorie and non-caloric drinks and foods. It is also sometimes used with other sweeteners such as sugar and sorbitol.

Examples of analyses for aspartame in (1) carbonated drink and (2) apple cider vinegar drink are introduced here.

### Analysis result of standard samples



### Structure of Aspartame



#### [Analytical conditions]

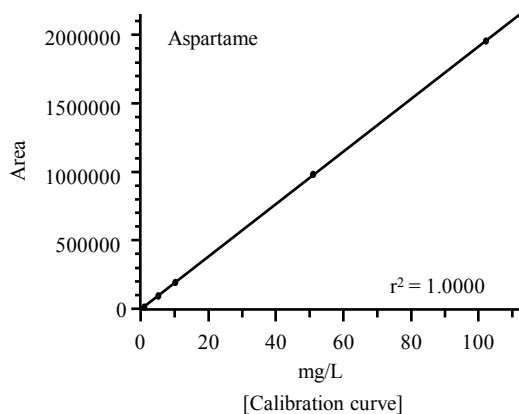
Column : HITACHI LaChrom C18 (5  $\mu$ m)  
 4.6 mm I.D.  $\times$  250 mm  
 Eluent : CH<sub>3</sub>CN / 0.01 mol/L KH<sub>2</sub>PO<sub>4</sub> (pH 3.18) = 15 / 85 (v/v)  
 Flow rate : 1.0 mL/min  
 Column temp. : 40°C  
 Detection : UV 210 nm  
 Injection vol. : 10  $\mu$ L

#### [Preparation of Standard Sample]

The sample was weighed, dissolved, and diluted with purified water.

The analytical samples for the calibration curve were prepared by diluting the standard sample to different concentrations with purified water.

### Linearity



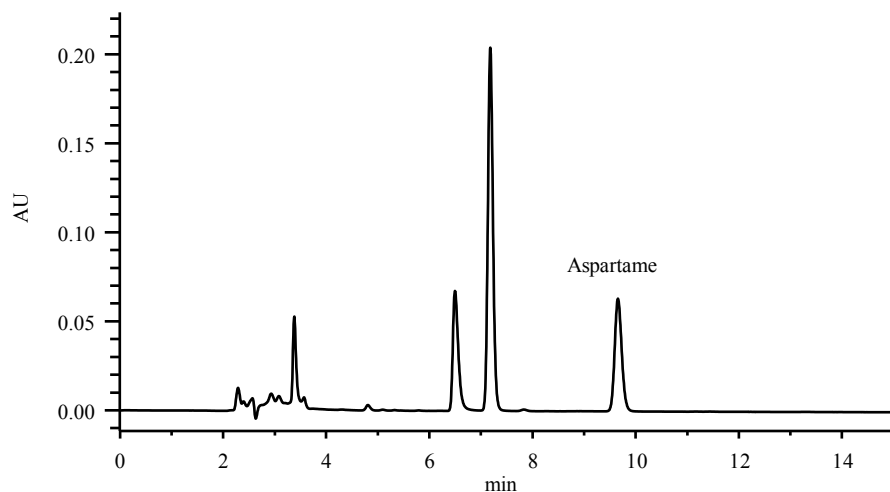
A fairly linear calibration curve was obtained with the following concentration ranges : 1 – 100 mg/L



## Analysis of Artificial Sweeteners

### ■ Analysis of example samples

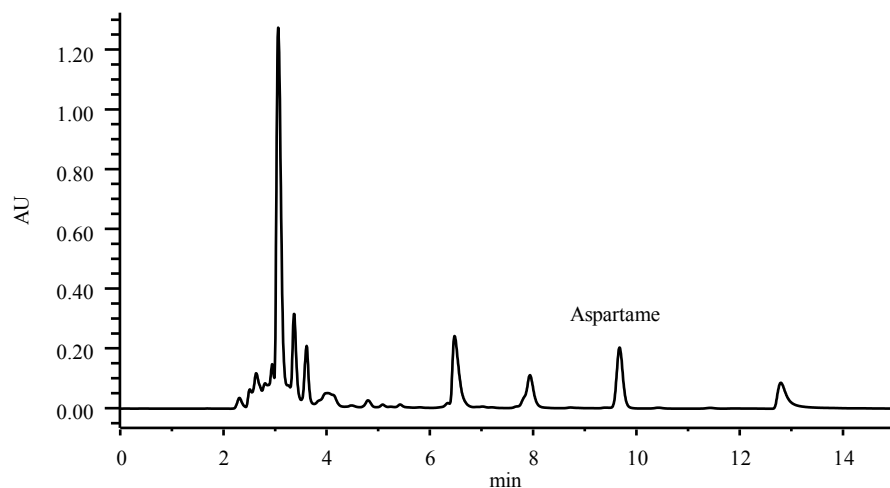
#### Carbonated drink (sugar free)



[Preparation of Carbonated Drink (sugar free)]

An appropriate amount of the sample was taken. The sample was degassed by a sonicator, diluted to 10 times with water and filtered through a 0.45  $\mu\text{m}$  filter to prepare the analytical sample.

#### Apple Cider Vinegar Drink



[Preparation of Apple Cider Vinegar Drink]

The analytical sample was prepared by filtering through a 0.45  $\mu\text{m}$  filter.

System configuration : Primaide 1110 Pump, 1210 Auto Sampler, 1310 Column Oven, 1410 UV

NOTE : These data are an example of measurement; the individual values cannot be guaranteed.

The system is for research use only, and is not intended for any animal or human therapeutic or diagnostic use.