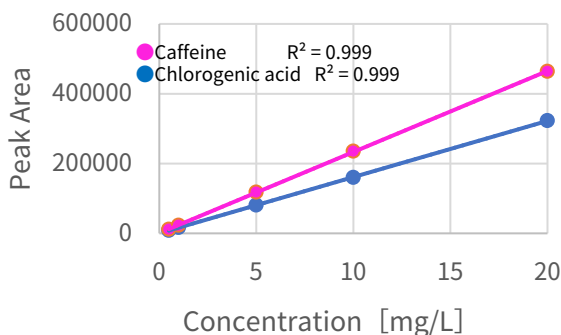


Chlorogenic acid is a type of polyphenol that is abundant in coffee, and is said to have an antioxidant effect, as well as an effect of suppressing the production of carcinogens and inactivating them, and various studies have been conducted.

This time, coffee-containing components were analyzed using two columns, InertSustain AX-C18, which has two separation modes of reverse phase and ion exchange, and InertSustain AQ-C18, which is suitable for retaining highly polar compounds. We would like to report that we were able to successfully separate the chlorogenic acid peak and the contaminating component peak with InertSustain AX-C18. (R. Takahashi)

### Ex. Standard sample measurement



: Calibration curve (used InertSustain AX-C18)

#### Conditions

Column size : 5 mm, 150×4.6 mm I.D.

Eluent : A) CH<sub>3</sub>OH

B) 50 mM KH<sub>2</sub>PO<sub>4</sub> in H<sub>2</sub>O (pH 2.3 H<sub>3</sub>PO<sub>4</sub>)

A/B = 30/70, v/v

Flow rate : 1.0 mL/min

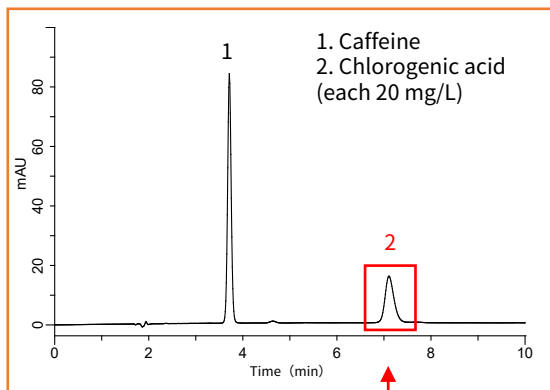
Col.Temp. : 40 °C

Detection : UV 280 nm

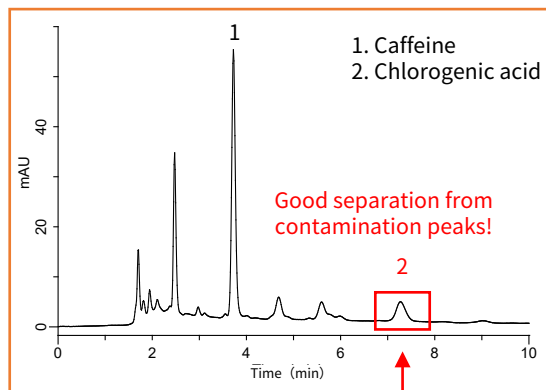
Inj.Vol. : 10 mL

### Ex. Analysis of commercial instant coffee

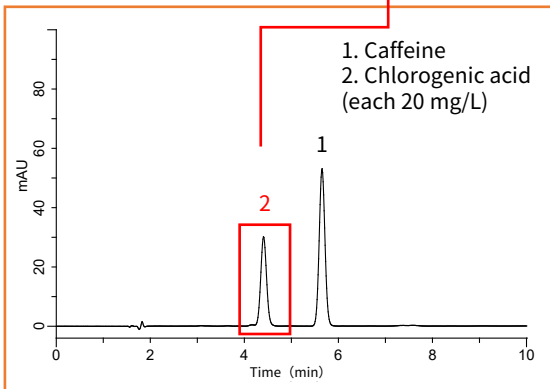
#### InertSustain AX-C18



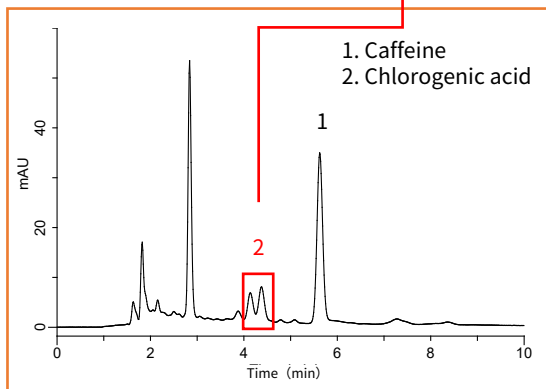
#### InertSustain AX-C18



#### InertSustain AQ-C18

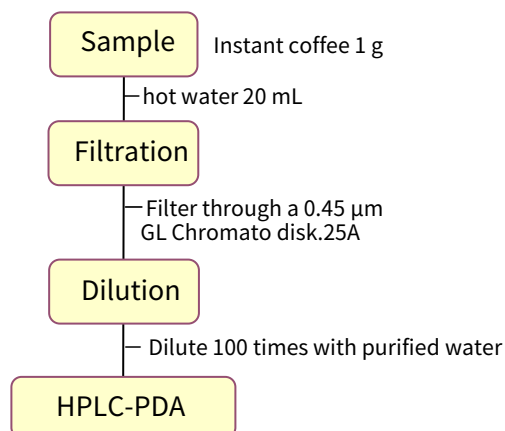


#### InertSustain AQ-C18

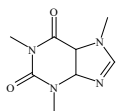


With InertSustain AX-C18, chlorogenic acid retention is enhanced by anion exchange action. On the other hand, caffeic acid, which has a relatively large pKa, becomes a non-dissociative type at pH 2.3, and is less likely to be adsorbed by anions.

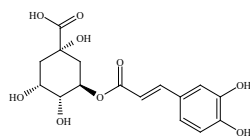
**Analysis example of commercial instant coffee at each pH using InertSustain AX-C18**



Structural formula

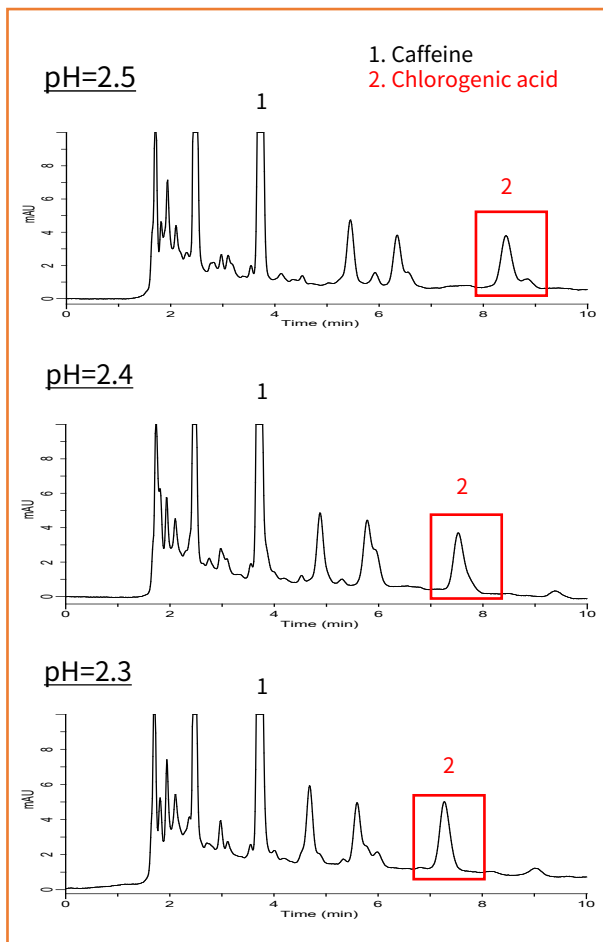


Caffeine



Chlorogenic acid

Structures are created using Chemistry 4-D Draw which is provided by ChemInnovation Software, Inc.



HPLC Column



InertSustain AX-C18  
(5 μm, 150 x 4.6 mm I.D.)  
Cat.No. 5020-91014

GL Chromato Disk

GL CHROMATO DISK 25A 0.45 μm (100 pcs)  
Cat.No. 5040-28512

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