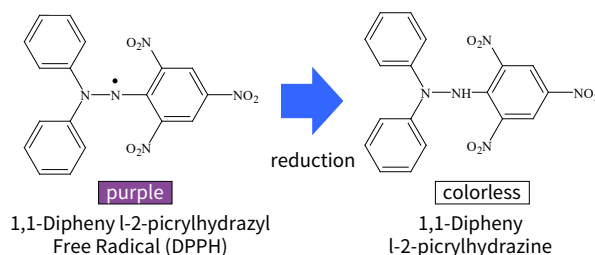


Analysis of Antioxidant capacity by pre-column HPLC using DPPH radical

This time, we will introduce an example of measuring the antioxidant capacity (DPPH radical scavenging activity) of food using 1,1-diphenyl-2-picrylhydrazyl free radical (DPPH), which is known as a stable radical. DPPH is known as a purple stable radical and becomes colorless when reduced. This time, by adding tea to DPPH, we confirmed whether changes would occur due to antioxidants such as catechins.

(K. Suzuki)

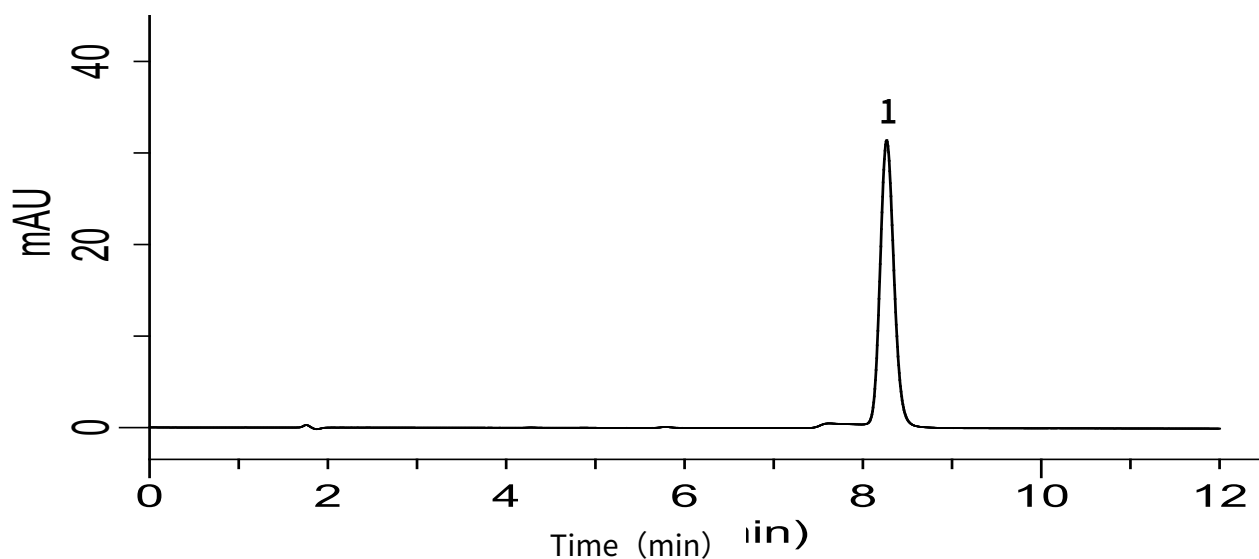
Structural formula



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

Analysis example of DPPH standard solution

1. 1,1-Diphenyl-2-picrylhydrazyl Free Radical
(100 mg/L in CH₃CN dehydrated by Molecular sieve 5A)



HPLC conditions

Column : InertSustainSwift C8
(5 μm, 150 × 4.6 mm I.D.)

Cat. No. : 5020-88331

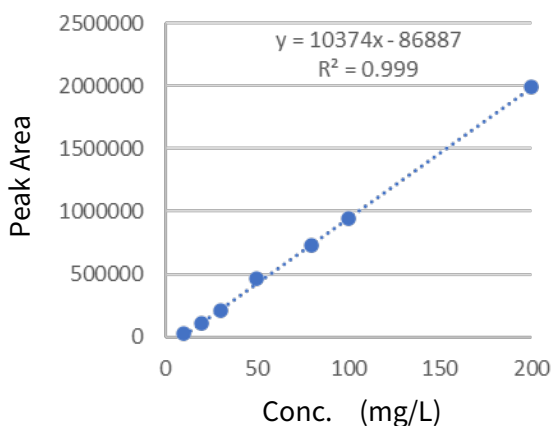
Eluent : A) CH₃CN
B) H₂O
A/B = 55/45, v/v

Flow rate : 1.0 mL/min

Col.Temp. : 40 °C

Detection : VIS 540 nm (DAD)

Inj.Vol. : 10 μL

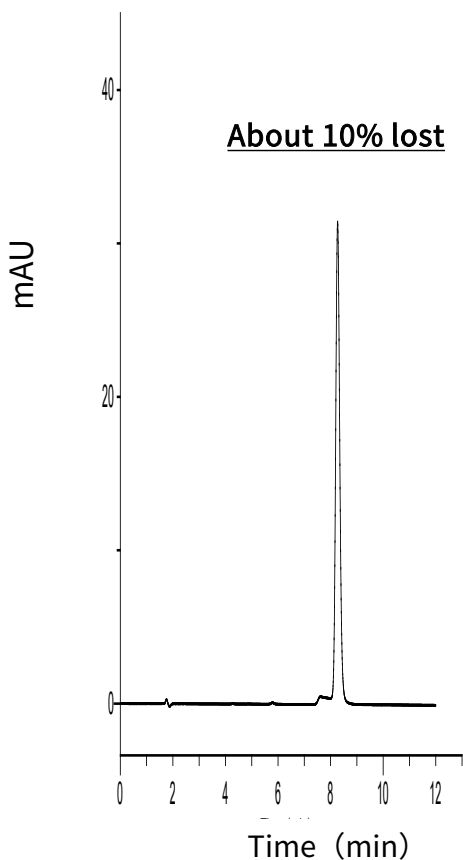


DPPH free radical calibration curve

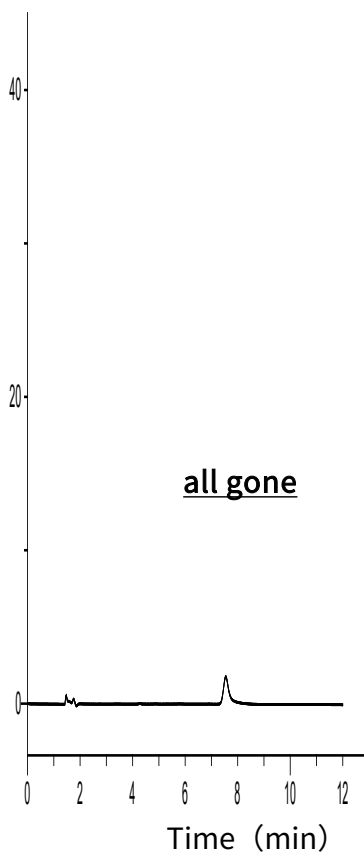
Analysis example

The sample was added so that the DPPH was 100 mg/L, and the measurement was performed.

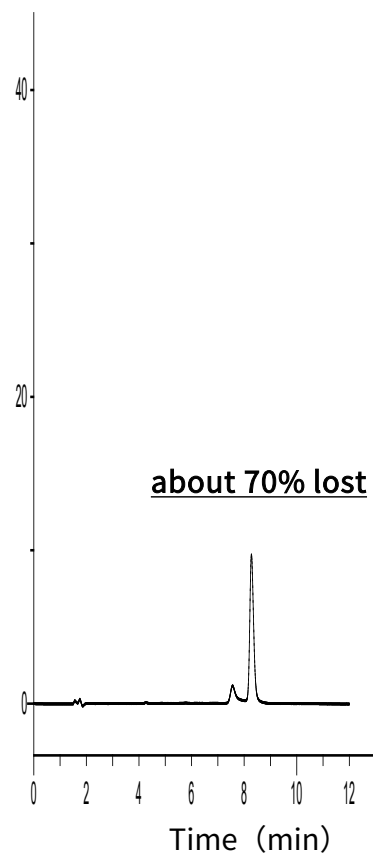
ultrapure water



**Tea
(diluted 10 times
with ultrapure water)**



**Tea
(diluted 100 times
with ultrapure water)**



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