



2.9 Analysis of Chlorophyll in Spinach (1) - LC

■ Explanation

Chlorophyll is the green pigment required for photosynthesis in seed plants and seaweed. Chlorophyll is divided into types a to e, being dependant on its structure. Here, an analysis example for chlorophyll a and b in spinach will be introduced.

Generally, chlorophyll shows a spectrum with characteristic absorption maximum at the 430 to 450 and 650nm regions. The detection and spectrum is provided by a photodiode array UV-Vis detector.

References

Shimadzu HPLC Food Analysis Applications Data Book (C190-E047)

■ Pretreatment

1. Add 10mL of acetone to 10g of spinach, and mix.
2. Centrifugal separation (3000 rpm for 10 min).
3. Inject 10 μ L of the supernatant liquid.

■ Analytical Conditions

Instrument	: HPLC
Column	: STR ODS- (4.6mm ϕ $\times$ 150mmL)
Mobile phase	: Methanol
Temperature	: 40
Flow rate	: 1mL/min
Detection	: Photodiode array detection from 220nm to 700nm

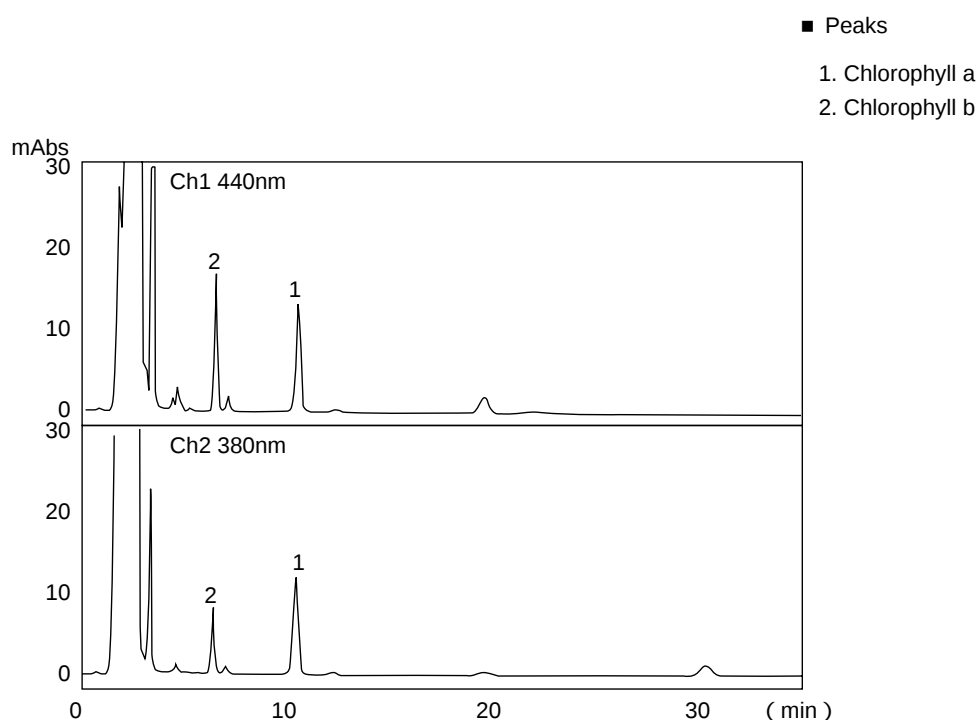


Fig. 2.9.1 Analysis of chlorophyll in spinach