SHIMADZU

Nexera
Ultra High Performance Liquid Chromatograph

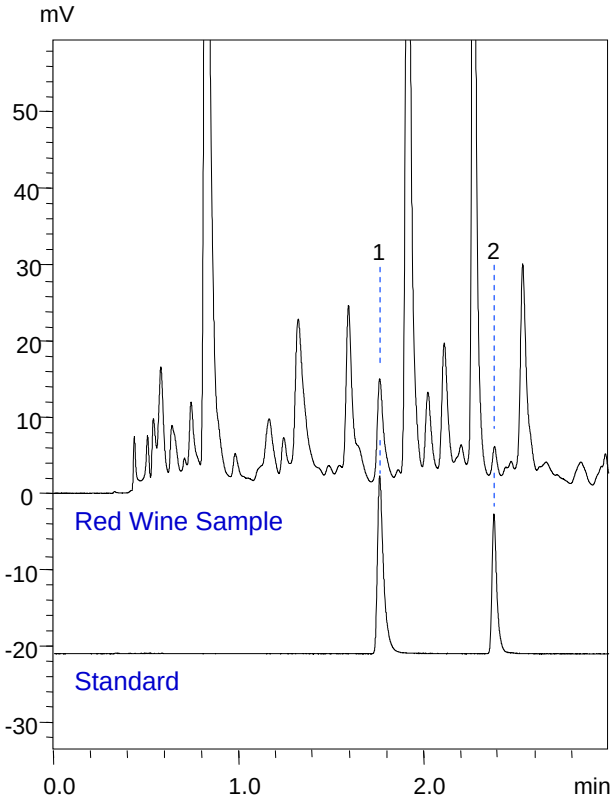
Nexera Application Data Sheet No.11

Ultra-High-Speed Analysis of Polyphenols in Wine

Red wine contains many types of polyphenols. One of them, resveratrol, is attracting a great deal of attention as an antioxidant that may have the ability to extend life. A high-resolution column is used to resolve the impurity components for the analysis of resveratrol in red wine. A fluorescence detector is effective from both the sensitivity and selectivity viewpoint. This Application Data Sheet introduces the ultra-high-speed analysis of resveratrol in red wine using Nexera with an RF-20Axs high-sensitivity fluorescence detector.

Analysis of Resveratrol in Red Wine

Resveratrol standard solutions were prepared as a 50 % methanol solution of 5 mg/L each of trans- and cis-resveratrol. Red wine was acidified with hydrochloric acid and extracted with diethyl ether, evaporated and dried, and dissolved in 50 % methanol. The Shim-pack XR-ODS III analysis column with 2.2 µm particle size (150 mmL. x 2 mmI.D.) achieved high-speed and high-resolution analysis. The maximum system pressure load for this analysis was 75 MPa. The cell temperature control function of the RF-20Axs detector maintained a 20 ºC temperature to ensure highly accurate analysis that is unaffected by the room temperature fluctuations.



Column	: Shim-pack XR-ODSⅢ (150 mmL. x 2.0 mm I.D., 2.2 µm)
Mobile Phase	: A : 0.2% Formic acid in Water B : 0.2% Formic acid in Acetonitrile
Gradient	: B 23% (0 min) → 26% (1 min) → 40% (2.5 min) → 100% (2.51-4 min)
Flow Rate	: 0.7 mL/min
Column Temp.	: 60 ℃
Injection Volume	: 1 µL
Detection	: Fluorescence (RF-20Axs) Ex. 300 nm, Em. 386 nm
Flow Cell	: Semi-micro cell
Pressure	: 75 MPa

Peaks :
1. *trans*-Resveratrol
2. *cis*-Resveratrol

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Issued Dec, 2010