



## Comparison of natural water by HPLC / UV / OCD

Natural water is known to show different component profiles depending on the environment of water sources<sup>1)</sup>. In this report, samples of commercially natural waters were separated by size exclusion chromatography, and dissolved organic compounds were detected by UV detection (detection wavelength: 254 nm) and Organic Carbon Detector (OCD). UV and OCD chromatograms were showed different profiles for each natural water. Combining UV chromatograms and OCD data, Natural water was able to be grouped by its source type..



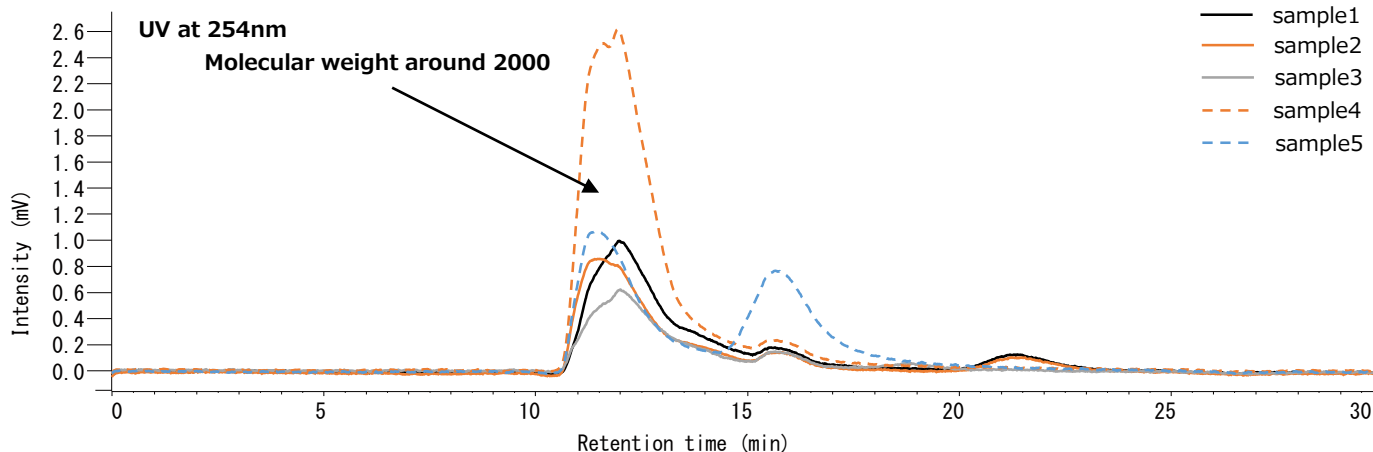
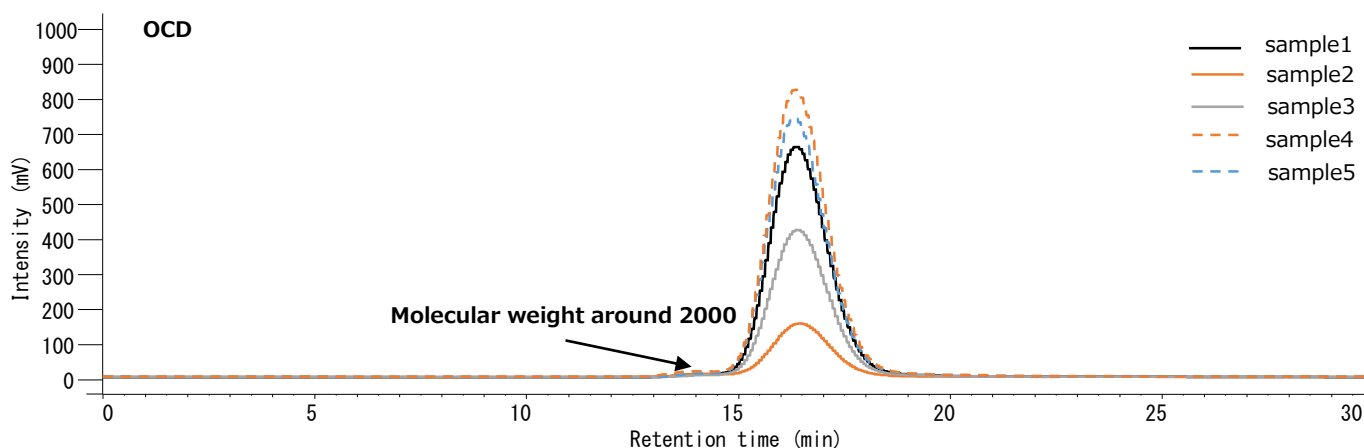
Organic carbon Detector  
TOC M9 series



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Liquid Chromatograph  
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### Chromatogram

- ✓OCD showed peaks in the region of molecular weight of 600 or less.
- ✓In the UV Chromatogram, the different peak profiles were observed in each natural water samples.



#### Analytical conditions

Eluent : Buffer for HPLC-OCD\*

Column : SEC column for HPLC-OCD\*

Temperature : 30 °C

Flow rate : 1.0 mL/min

Injection vol. : 1000 µL

Detection : OCD / UV at 254 nm

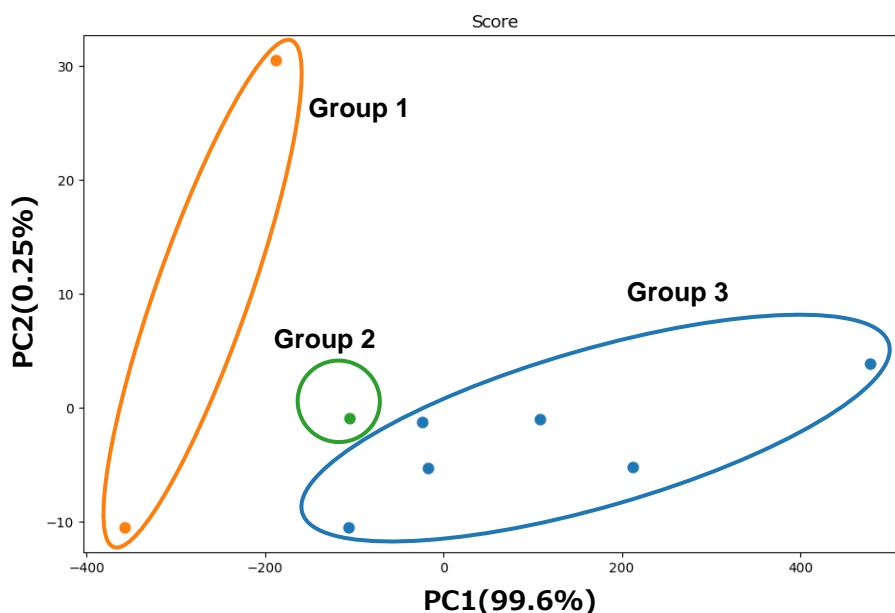
\*Molecular weight was estimated by PEG calibration curve.

\*Please contact us for more detail.

1) H.Tochimoto, et al. Characterization of Groundwater quality of drinking water source in Izu-Oshima island by multivariate analysis. *Journal of Japan Society on Water Enviroment*, 2005, 28.12: 759-767.

## Principal component analysis

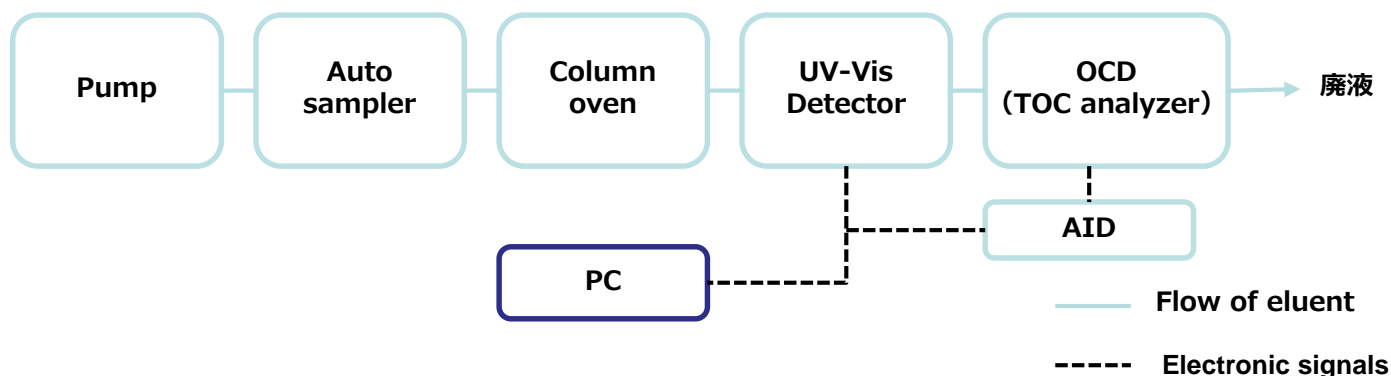
- ✓ Principal component analysis was performed using UV chromatograms and OCD data, and the samples were grouped by water source (Group 1-3).
- ✓ Comprehensive analysis of water with UV and OCD is useful for water quality control.



Acquired data was subjected to principal component analysis using multivariate analysis software 3D SpectAlyze®.

## Detail of HPLC-UV-OCD system

- ✓ Injected sample is separated by molecular weight on a separation column, it is analyzed online by a UV detector and then by OCD.
- ✓ OCD signals can be monitored via AID with CDS and data processing can be performed.



### 【KEY WORDS】

HPLC、TOC、HPLC-OCD、Bio-polymer、Fouling、Dissolved organic carbon、Natural water、Quality control

<System> Chromaster 5110, 5260 (Including optional syringe and optional rack), 6310, 5420, AID TOC M9 series (Suez, Central Science Co., Ltd. sold in Japan)

3D SpectAlyze is a registered trademark of Dynacom in Japan.

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

Page.2