

Measurement of Humic Substance in Tap Water (3D Fluorescence Spectra)

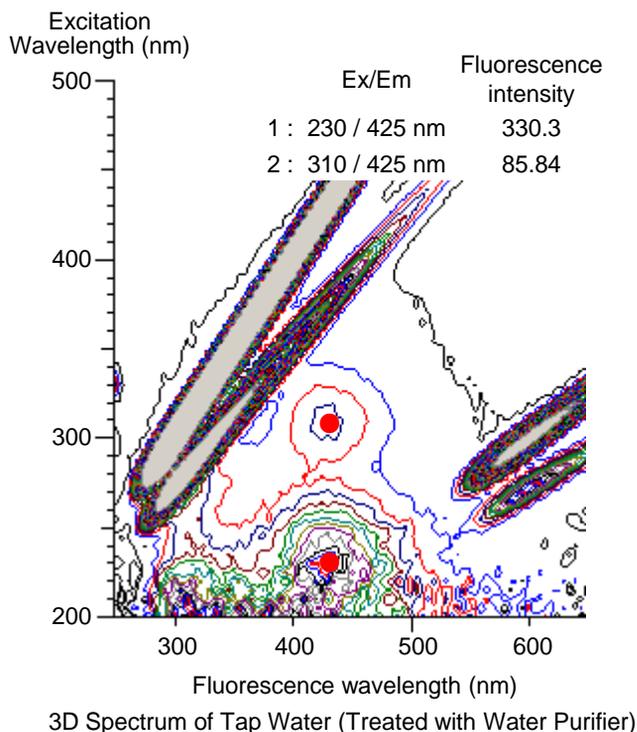
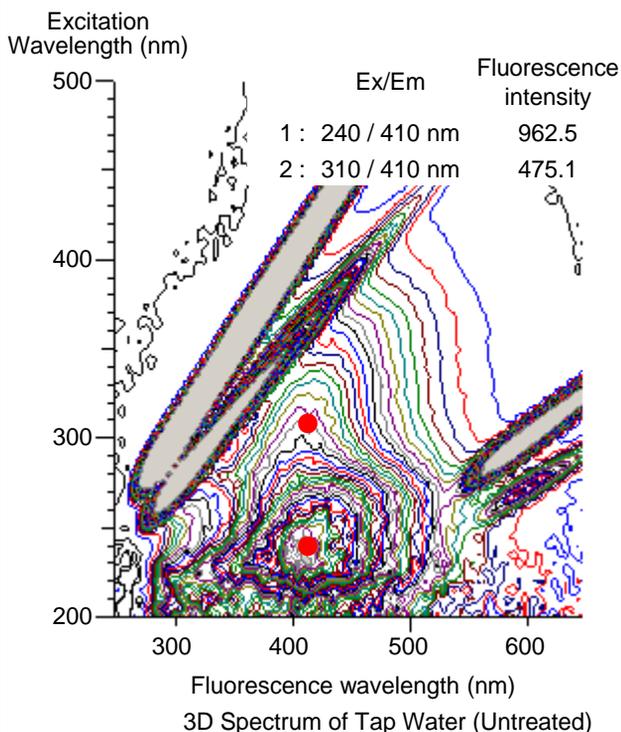
INTRODUCTION

Humic substances are dissolved organic matters contained in environmental water such as river and lake water. Humic substances, depending on their forms, have different fluorescence properties and thus, the fluorescence spectrum analysis is a useful analysis method for the identification of humic substances. This time, the humic substances contained in tap water were analyzed by a fluorophotometer. By analyzing the fluorescence spectrum, the decrease in the amount of the humic substances in the tap water treated with a home use water purifier was confirmed. By using the F-7000 fluorophotometer, the data is obtained at the ultra-high scan speed of 60000 nm/min and therefore, the fluorescence properties can be easily confirmed even when a large number of samples are to be analyzed. In addition, the instrument has the highest sensitivity for the instrument class and is suitable for the analysis of trace humic substances contained in samples such as tap water.

SAMPLE	ACCESSORY
SAMPLE: Tap water (untreated, treated with a water purifier) (Sampling location: Hitachinaka-shi, Ibaraki)	Fluorophotometer cell: 10 mm rectangular cell (synthetic quartz, four-side transparent)

ANALYSIS CONDITIONS

Instrument	: F-7000	Filter	: GG295	Photomultiplier Vol.	: 650V
Slit on excitation side	: 10 nm	Response	: Automatic	Full scale	: 1000
Slit on fluorescence side	: 10 nm	Detector	: R928F	Contour line interval	: 25
Scan speed	: 60000 nm/min				



- The amount of the humic substances in tap water varies depending on the sampling locations, seasons, treatment processes at water purification plants.
- This data sheet does not warrant the performance of the home-use water purifier.

KEY WORDS

Environmental Analysis Related, Environmental Water, Humic Substance, Tap Water, Dissolved Organic Matter, Clean Water, Treated Water, Humic Acid, Fulvic Acid, Filter, Filtration, 3D Fluorescence Spectrum, 3D, FL, F-7000

Fluorophotometer (FL)

Sheet No. FL110013-01

Measurement of Humic Substance in Tap Water (Comparison of Fluorescence Method and Absorption Method)

INTRODUCTION

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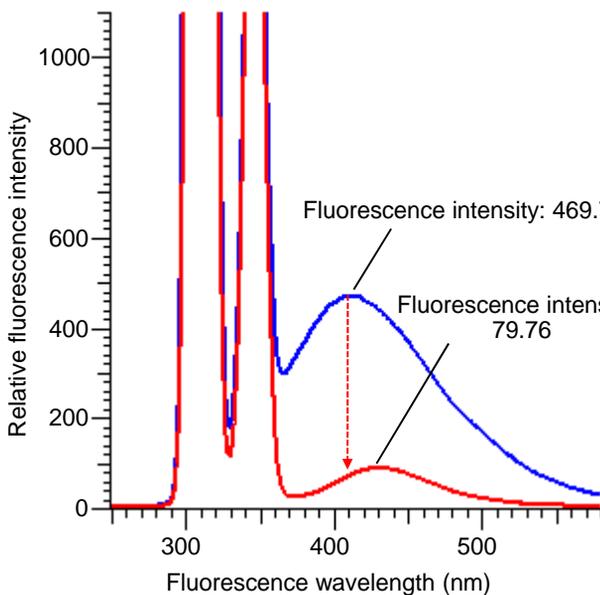
This time, the humic substances contained in tap water were analyzed by a fluorophotometer. By analyzing the fluorescence spectrum, the decrease in the amount of the humic substances in the tap water treated with a home use water purifier was confirmed.

One of the methods used to analyze the contents of organic matters is UV absorption spectrum analysis. However, in samples such as tap water, the concentrations of humic substances are low. As there is no sufficient difference between the absorbances, it is difficult to confirm the effects of water purifiers by the UV analysis. The fluorescence spectrometric analysis, especially with the F-7000 fluorophotometer which has the highest sensitivity for the instrument class, is suitable for the analysis of trace humic substances.

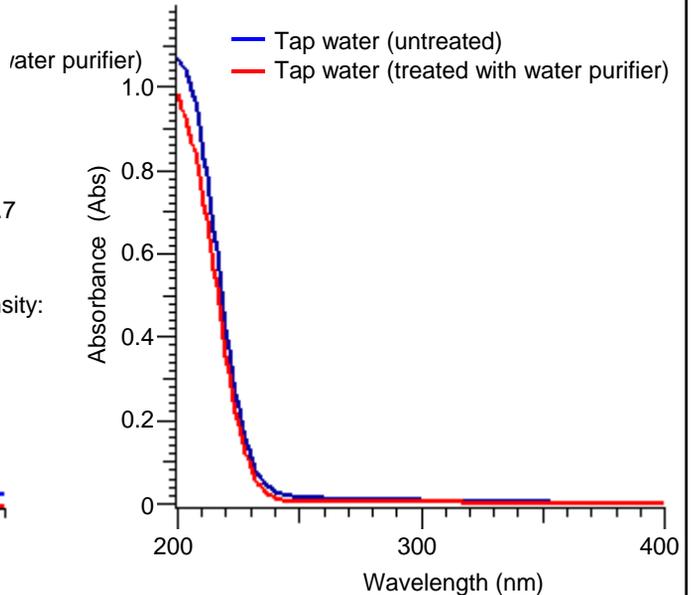
SAMPLE	ACCESSORY
SAMPLE : Tap water (untreated, treated by water purifier) (Sampling site: Hitachinaka-shi, Ibaraki)	Fluorophotometer cell: 10 mm rectangular cell (synthetic quartz, four-side transparent) Spectrophotometer cell: 10 mm rectangular cell (synthetic quartz, two-side transparent)

ANALYSIS CONDITIONS

Instrument	: F-7000	Slit on fluorescence side	: 10 nm	Response	: Automatic
Excitation wavelength	: 310 nm	Scan speed	: 240 nm/min	Detector	: R928F
Slit on excitation side	: 10 nm	Filter	: GG295	Photomultiplier Vol.:	650 V
Instrument	: U-3900	Scan speed	: 300 nm/min	Sampling interval	: 1 nm
Measurement wavelength range	: 200 - 400 nm	Slit	: 5 nm	Control	: Ultrapure water



Fluorescence Spectrum of Tap Water
(Untreated, Treated with Water Purifier)



Absorption Spectrum of Tap Water
(Untreated, Treated with Water Purifier)

- The amount of humic substances varies depending on the sampling locations, seasons, and treatment processes at water purification plants.
- This data does not warrant the performance of the home use water purifier.

KEY WORDS

Environmental Analysis Related, Environmental Water, Humic Substance, Tap Water, Dissolved Organic Matter, Clean Water, Treated Water, Humic Acid, Fulvic Acid, Filter, Filtration, Fluorescence Spectrum, Absorption Spectrum, FL, F-7000, UV, U-3900

Fluorophotometer (FL)

Sheet No. FL110013-02