Application Note

Date: 1999.6.28 No. 820013H-E

Analysis of alkylphenol in environmental water-1

Alkyl phenols are considered to be extrinsic endocrine disrupting chemicals that can disrupt the body's endocrine system ("environmental hormones"). In this report, tiny amounts of several alkyl phenols in environmental water were concentrated online using column switching and analyzed by reversed phase chromatography. Fig. 1. Shows the chromatograms of river water and river water spiked with 1 ppb of a standard sample.

Keywords: 1. alkyl phenol, 2. STD, river water, 3. ODS, 4. FL. 5. endocrine disrupting chemicals

STD

1. 4,4-Dihydroxybipnenyl
2. 4-Ethylphenol
3. Bisphenol A
4. 4-Butoxyphenol
5. 4-Propylphenol
6. 3-tert-Butylphenol
7. 4-tert-Butylphenol
8. 2-tert-Butylphenol

Conditions:

Pretreatment Column:	CrestPak C18T-5P (4.6mm I.D. x 50mmL)
Pretreatment Eluent:	H_2O
Switching time:	6 to 38min
Separation Column:	CrestPak C18T-5 (4.6mm I.D. x 250mmL)
Eluent:	A=CH_3OH / H_2O (60/40) B=CH_3OH

Time(min)	A(%)	B(%)
0.0	100	0
35.0	100	0
35.1	0	100
50.0	0	100
50.1	100	0

1 cycle 70min

Flow rate:	1.0mL/min
Column temperature:	40 degree celsius
Sample:	river water + STD(1ppb) river water
Injection volume:	5mL

FL time program:

Time (min)	Ex(nm)	Em(nm)	Gain
0.0	276	362	x1000
13.0	280	310	x1000
16.0	282	306	x1000
18.2	290	328	x1000
22.0	285	320	x1000
27.0	298	302	x1000

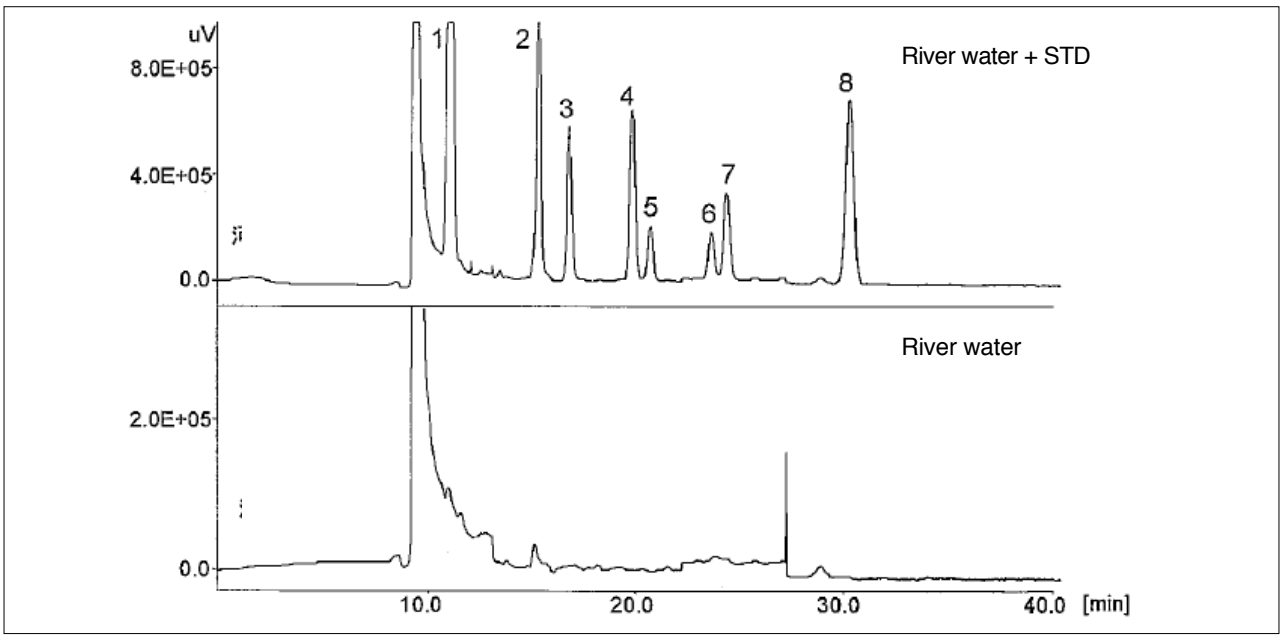

Fig. 1. Chromatograms of river water

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