113	PP	Lincomycin	80	21.01	0.91	89.3	6.6	86.1	7.7	ND	ND	ND	ND	70.6	8.3
114	Pest	Thiabendazole[a]	8	21.02	2.39	82.1	5.9	91.1	12.7	96.5	8.7	88.7	7.8	72.0	7.1
115	Pest	Bendiocarb	40	21.21	1.72	76.1	18.5	74.7	23.2	100.5	18.4	91.5	11.2	NT	
116	PP	Mepirizole	8	21.30	1.01	80.8	13.4	67.9	21.9	103.9	20.7	82.2	9.1	74.6	16.0
117	Pest	Clodinafop	80	21.32	2.486	87.9	6.0	94.4	15.7	ND	ND	ND	ND	79.2	11.5
118	Pest	Carbofuran	8	21.42	1.52	79.3	18.5	85.8	22.7	112.0	18.5	101.8	8.6	74.9	10.7
119	Pest	Fluazifop	80	21.50	1.98	86.4	5.4	87.8	17.7	ND	ND	ND	ND	83.6	8.0
120	PP	Betaxolol	8	21.57	2.69	92.3	6.7	93.6	8.8	105.6	4.1	106.2	6.0	96.7	8.9
121	Pest	Isouron	20	21.60	1.98	78.1	13.5	87.1	21.0	107.5	19.5	88.0	11.1	83.3	12.9
122	Pest	Tebuthiuron	8	21.72	1.82	78.4	13.5	81.6	25.4	110.3	19.3	90.7	10.7	76.8	13.5
123	PP	Propranolol	8	21.76	3.48	91.1	6.7	91.9	10.1	112.0	7.7	101.7	6.5	91.2	7.8
124	PP	Carbamazepin[a]	8	21.90	1.51	91.8	5.4	82.0	16.3	104.2	7.8	101.9	4.2	94.8	8.7
125	Pest	XMC	8	22.08	2.3	65.3	28.0	72.6	24.0	94.4	25.6	87.7	16.4	NT	
126	Pest	Bensulfuron-methyl	80	22.13	0.79	87.1	4.9	94.2	9.9	ND	ND	ND	ND	87.3	7.1
127	PP	Prednisolone	8	22.16	1.62	93.7	5.9	97.0	9.1	108.0	7.7	102.9	3.6	80.6	11.2
128	Pest	Fenthion sulfoxide	8	22.21	1.806	98.4	6.1	96.5	18.6	141.3	24.4	108.1	9.6	96.9	13.0
129	Pest	Carbaryl	8	22.41	1.85	79.1	12.8	78.1	25.8	106.1	20.8	89.1	11.1	NT	
130	Pest	Ethiofencarb	8	22.43	2.04	55.1	25.1	33.1	51.6	65.1	35.5	50.4	14.7	NT	
131	Pest	xylylcarb	8	22.43	2.09	61.9	29.5	72.0	27.1	89.7	27.5	89.6	14.4	NT	
132	Pest	Fenthion sulfone	8	22.76	2.342	88.3	5.2	82.5	24.8	114.3	17.4	97.7	11.1	NT	
133	PP	PropyphenazoLe	8	22.77	1.74	76.6	16.6	69.6	28.0	100.1	26.6	73.4	26.8	92.6	11.1
134	Pest	Iprodione	20	22.79	2.8	88.0	5.8	83.2	25.2	111.2	18.2	89.2	12.5	NT	
135	Pest	Monolinuron	80	22.94	2.2	67.7	28.6	68.0	26.7	ND	ND	ND	ND	NT	
136	PP	Losartan[a]	8	23.13	6.1	82.4	8.7	87.3	7.6	94.4	13.7	97.0	4.9	59.0	17.4

137	Pest	Tralkoxydim 1	8	23.20	5.02	70.9	14.6	70.0	32.2	95.2	22.3	67.2	21.0	NT	
138	PP	Diphenidol	8	23.25	4.3	90.7	7.0	94.4	6.9	105.2	4.7	100.1	3.9	97.2	10.3
139	PP	Tolperisone	8	23.38	3.81	85.6	10.1	84.3	13.2	99.9	7.5	93.4	7.0	66.8	20.3
140	Pest	Dimethirimol	8	23.39	2.79	73.1	15.6	76.3	25.3	106.1	22.2	87.6	12.0	90.0	13.7
141	Pest	Pirimicarb	8	23.40	1.7	68.8	24.4	75.8	21.9	105.2	26.4	89.0	13.4	83.8	11.5
142	Pest	Furametpyr	8	23.63	2.36	84.8	7.8	81.6	22.3	106.2	12.5	93.1	8.6	89.6	10.7
143	Pest	Cyclosulfamuron	80	23.64	1.41	84.9	4.1	91.5	9.6	ND	ND	ND	ND	95.5	5.8
144	PP	Dexamethasone	8	23.64	1.83	96.1	5.7	104.6	6.5	103.8	4.2	104.9	6.6	91.1	11.0
145	Pest	Thiodicarb	8	23.69	1.62	92.3	5.7	92.6	16.4	108.7	5.2	93.1	7.6	NT	
146	Pest	Isoprocarb	8	23.74	2.3	69.1	25.1	77.0	22.7	91.0	15.4	89.3	15.2	NT	
147	Pest	Methabenzthiazuron	8	23.82	2.64	71.9	15.2	75.4	31.4	107.6	29.5	84.1	13.1	85.6	15.6
148	Pest	Fomesafen	40	23.92	2.9	91.0	6.7	98.7	11.2	99.2	6.6	100.1	17.9	88.7	8.3
149	Pest	Mepanipyrim_metabolite	8	23.97		82.0	8.0	81.9	22.4	107.5	15.5	91.8	10.2	96.3	14.9
150	Pest	Forchlorfenuron	8	23.98	3.2	82.7	5.0	92.9	6.7	100.3	4.5	90.7	9.5	74.7	10.2
151	Pest	2,3,5-Trimethacarb	8	24.07	2.25	68.5	21.3	74.6	24.0	102.0	25.96	91.2	13.34	NT	
152	PP	Griseofulvin	8	24.11	2.18	89.4	5.1	85.2	10.0	103.2	4.0	100.3	4.4	85.1	8.7
153	PP	Etodolac[a]	8	24.20	2.5	76.2	10.3	65.4	19.6	88.7	6.3	85.6	12.4	68.0	12.5
154	PP	Dextromethorphan	20	24.22	3.6	90.4	7.7	85.6	10.6	102.8	4.8	100.4	2.3	105.1	11.6
155	Pest	Diuron[a]	8	24.23	2.85	86.0	6.6	85.9	21.6	104.0	14.5	91.6	9.6	97.6	12.2
156	PP	Lidocaine[a]	8	24.37	2.44	77.8	17.2	82.0	13.2	97.7	9.2	96.0	5.4	99.1	41.2
157	PP	Virginiamycin M1	20	24.40	-0.659	83.8	8.0	86.8	5.3	97.5	12.2	94.0	8.9	48.6	40.2
158	PP	Paroxetine	8	24.54	3.6	79.5	10.3	47.7	45.5	79.5	9.3	90.0	15.0	56.7	10.8
159	Pest	Metominostrobin(E)	8	24.58	2.32	82.5	8.2	78.9	23.4	109.9	15.2	91.4	11.7	82.2	15.2
160	PP	Haloperidol	8	25.08	4.3	86.9	6.2	89.8	6.6	97.6	3.2	95.7	3.5	74.4	18.5

161	PP	Fluvoxamine	8	25.18	3.2	56.7	22.2	48.5	42.9	57.6	31.5	69.8	16.0	34.8	29.5
162	Pest	Fenobucarb	8	25.23	2.79	63.4	27.4	69.0	23.5	87.6	23.9	84.0	20.2	71.5	11.2
163	Pest	Propanil	80	25.40	3.12	89.7	10.0	64.9	42.7	ND	ND	ND	ND	93.4	13.5
164	PP	Erythromycin	8	25.50	3.06	90.4	5.4	91.4	7.6	90.7	6.3	95.6	6.7	132.2	12.0
165	Pest	Inabenfide	20	25.52	3.13	85.6	5.6	90.5	9.1	98.5	6.8	92.5	8.7	83.4	9.4
166	Pest	Siduron	8	25.58	3.8	90.5	5.3	90.6	17.9	107.8	7.1	107.3	12.2	93.8	9.6
167	Pest	Sethoxydim	8	25.61	4.51	43.3	17.6	37.4	35.0	55.6	35.7	40.8	26.5	73.8	12.6
168	PP	Fluoxetine	8	25.76	4.05	81.1	9.0	54.8	48.8	75.8	11.9	89.6	4.8	57.8	15.6
169	Pest	Methiocarb	20	25.80	3.08	117.9	17.9	74.1	23.3	86.7	10.4	87.9	9.8	NT	
170	PP	Azithromycin[a]	8	25.82	4.02	111.9	19.6	80.1	14.6	124.6	14.8	74.9	12.2	NT	
171	Pest	Ametryn	8	25.94	2.98	68.8	15.8	69.6	20.3	93.8	14.2	80.3	16.6	88.1	9.1
172	Pest	Linuron	40	26.00	3	78.0	19.9	67.1	27.7	103.6	27.0	83.2	14.3	93.1	16.1
173	Pest	Fluridone	8	26.00	1.87	85.6	7.6	88.1	8.9	118.1	4.2	97.0	8.0	106.1	29.7
174	PP	Imipramine	8	26.04	4.8	84.4	8.3	81.1	8.3	90.6	7.7	91.9	3.2	79.9	9.5
175	PP	Diazepam	8	26.04	2.91	83.9	7.7	78.8	25.6	103.1	20.2	98.1	5.4	91.2	12.7
176	Pest	Azoxystrobin	8	26.07	2.5	85.1	7.8	80.1	11.4	108.1	5.6	86.6	18.3	87.0	12.6
177	Pest	Promecarb	8	26.07	3.1	61.7	24.6	72.3	19.0	98.9	23.6	76.7	21.3	NT	
178	Pest	Pyriftalid	20	26.13	2.6	92.6	7.3	78.7	21.3	109.9	11.4	93.0	7.5	NT	
179	Pest	Dimethomorph(E)	8	26.17	2.63	82.0	7.0	76.4	13.0	89.4	14.8	87.1	10.5	83.6	10.4
180	Pest	Tralkoxydim 2	8	26.24	5.02	83.4	21.1	64.9	26.5	96.7	23.9	71.7	29.1	NT	
181	Pest	Fenamidone	8	26.27	2.8	82.3	6.5	77.3	15.1	94.8	5.3	84.4	15.9	85.9	11.9
182	Pest	Boscalid	40	26.31	2.96	81.3	7.4	78.0	18.6	100.7	11.7	90.0	11.2	85.9	10.6
183	Pest	Pyriminobac-methyl(Z)	4	26.46	2.11	113.7	14.4	77.2	24.6	104.8	18.3	89.7	7.9	30.7	46.6
184	PP	Testosterone	40	26.62	3.32	85.5	8.2	80.0	22.6	103.1	21.7	104.8	7.1	86.0	11.9

185	Pest	Dimethomorph(Z)	8	26.67	2.73	94.9	3.8	89.6	14.1	109.2	6.5	96.3	6.2	90.2	9.5
186	Pest	Dymron	8	26.69	2.7	89.7	5.3	89.2	10.0	103.6	4.9	93.1	7.7	93.0	12.8
187	PP	Verapamil	8	26.71	3.79	87.5	6.1	82.2	5.6	98.7	5.9	92.0	6.4	85.4	7.5
188	Pest	Ferimzone(E)[a]	8	26.81	2.83	58.5	11.6	53.4	18.4	82.4	12.4	49.9	24.4	61.7	17.2
189	PP	Tilmicosin	80	26.81	4.95	94.3	9.9	61.4	25.6	ND	ND	ND	ND	NT	
190	Pest	Fenhexamid	80	26.91	3.51	85.4	7.3	88.6	16.4	ND	ND	ND	ND	84.2	10.9
191	Pest	Cumyluron	8	26.95	2.61	85.5	5.1	84.2	13.8	97.3	8.4	91.4	8.1	78.2	14.4
192	Pest	Benzobicyclon	8	26.96	3.1	79.8	4.9	78.9	13.5	86.3	7.0	72.9	12.9	56.2	17.2
193	Pest	Chloroxuron	8	26.98	3.2	83.3	15.0	84.6	18.5	100.4	10.8	90.0	7.4	86.5	14.6
194	Pest	Ferimzone(Z)[a]	8	27.07	2.83	75.0	12.2	73.2	20.9	107.4	15.6	76.2	6.5	86.4	17.0
195	Pest	Triticonazole	8	27.16	3.29	83.2	5.4	85.7	18.3	93.9	8.9	92.0	10.2	87.4	13.6
196	Pest	Triflumizole metabolite	8	27.18		64.4	23.0	70.7	21.1	90.2	23.3	83.1	16.6	64.3	10.2
197	Pest	Tetraconazole	8	27.21	3.56	106.1	12.5	78.2	21.2	94.4	12.9	80.1	16.1	82.8	11.0
198	PP	Clarithromycin[a]	8	27.23	3.16	87.4	6.3	88.2	6.8	94.8	7.2	93.8	7.7	78.5	23.7
199	Pest	Methoxyfenozide	8	27.32	3.7	92.5	5.0	90.8	10.1	108.7	3.5	98.3	6.1	NT	
200	PP	Diltiazem[a]	8	27.35	2.8	88.0	6.1	84.2	5.9	101.9	4.1	96.0	7.5	100.7	22.2
201	Pest	Simeconazole	8	27.56	3.2	76.3	11.1	81.4	19.7	95.6	12.1	91.6	9.4	84.6	10.9
202	Pest	Prometryn	8	27.59	3.1	86.9	18.1	67.3	19.4	89.2	13.8	77.3	21.7	75.2	12.1
203	Pest	Iprovalicarb	8	27.60	3.2	83.7	7.5	83.9	21.1	108.1	11.5	93.4	9.4	NT	
204	Pest	Thifluzamide	8	27.64	4.1	116.1	17.1	104.5	19.5	128.9	9.8	93.8	19.2	89.6	9.8
205	Pest	Flufenacet	8	27.67	3.2	71.5	12.8	77.5	23.9	99.9	21.2	83.9	14.8	73.8	15.3
206	Pest	Cyazofamid	8	27.69	3.2	67.1	8.8	65.2	13.8	89.4	9.9	69.7	10.4	34.3	15.1
207	Pest	Butafenacil	8	27.70	3.2	83.9	4.6	82.2	13.2	103.4	7.1	90.5	4.8	83.9	10.5
208	Pest	Fipronil	40	27.91	4	87.6	6.2	83.2	26.1	97.4	7.1	96.0	8.5	84.5	11.4

209	Pest	Chromafenozide	8	27.92	2.7	88.6	4.9	88.6	10.3	104.5	4.7	96.1	7.0	93.5	4.6
210	Pest	Epoxiconazole	8	27.94	3.44	75.2	5.4	80.5	22.9	92.5	12.9	89.0	11.4	90.4	7.1
211	PP	Amitriptyline	8	28.07	4.92	82.1	9.5	80.0	12.4	90.4	9.9	92.1	6.2	73.8	12.7
212	Pest	Mepanipyrim	8	28.12	3.28	65.9	11.2	74.2	31.0	82.9	24.3	72.2	27.0	71.0	24.7
213	PP	Roxithromycin[a]	8	28.18	1.7	85.5	6.8	83.0	7.5	92.7	5.3	90.1	8.1	81.6	9.2
214	Pest	Bensulide	8	28.29	4.2	84.2	3.3	80.1	12.6	97.4	7.1	89.7	8.8	84.6	10.4
215	Pest	Diflubenzuron	8	28.31	3.89	78.1	7.8	77.3	17.7	92.2	14.1	83.9	13.1	75.9	12.4
216	Pest	Tebuconazole	8	28.31	3.7	99.8	13.0	78.5	19.0	92.8	10.5	89.8	12.2	91.4	8.5
217	Pest	Tetrachlorvinphos	20	28.35	3.53	72.2	11.1	76.1	25.1	92.9	22.7	79.0	16.0	NT	
218	PP	Dipyridamole	8	28.42	1.5	48.0	40.4	39.6	53.7	44.3	17.6	42.0	23.9	78.6	11.0
219	Pest	Tebufenozide	8	28.53	4.25	87.7	4.4	88.0	9.4	105.2	4.1	93.0	6.3	NT	
220	Pest	Fentrazamide	8	28.80	3.6	75.8	9.1	75.7	21.7	91.0	15.6	80.8	21.9	NT	
221	Pest	Fenoxycarb	8	28.81	4.07	72.6	8.4	78.2	31.1	83.4	25.3	76.1	27.5	67.9	20.3
222	Pest	Naproanilide	20	28.81	4.31	71.0	10.0	72.5	27.4	79.7	21.7	70.9	26.8	72.4	12.7
223	PP	Promethazine	8	28.90	4.81	68.4	38.3	69.9	63.4	54.8	15.9	36.2	36.3	NT	
224	Pest	Etobenzanid	8	29.03	3.68	76.5	16.3	63.8	36.5	63.5	30.1	57.3	39.7	72.4	32.0
225	Pest	Anilofos	40	29.16	3.81	77.1	8.8	84.6	26.4	95.9	15.5	81.8	18.5	82.3	15.5
226	Pest	Oxadiargyl	20	29.33	3.95	91.9	15.6	72.5	26.2	81.6	28.9	71.2	47.4	NT	
227	Pest	Prochloraz	8	29.42	4.12	74.2	6.6	74.8	15.6	86.8	12.7	82.0	18.7	NT	
228	PP	Chlorpromazine	8	29.80	5.41	45.8	16.5	43.6	27.1	54.9	13.6	51.8	19.0	30.5	17.3
229	Pest	Difenoconazole	20	29.81	4.4	91.8	14.0	71.9	19.3	84.3	12.6	79.6	22.7	81.6	10.4
230	Pest	Pencycuron	40	29.82	4.68	72.7	8.1	76.8	18.7	82.6	11.8	78.2	24.3	78.0	18.7
231	Pest	Pirimiphos-methyl	20	29.82	4.2	64.9	23.9	57.9	20.3	50.7	35.6	56.6	57.8	NT	
232	Pest	Cyprodinil	40	29.84	4	56.8	16.7	72.2	35.4	64.6	33.3	57.9	47.0	46.0	27.5

233	Pest	Terbucarb	8	29.99	5	66.3	15.5	77.7	15.6	83.3	18.7	79.0	20.5	NT	
234	Pest	Pyraclostrobin	40	30.00	3.99	71.7	9.4	77.6	28.1	83.9	18.6	78.1	15.8	75.4	14.9
235	Pest	Cyflufenamid	40	30.06	4.7	67.8	7.3	81.5	30.3	78.4	22.9	73.5	32.9	73.7	10.2
236	PP	Norgestimate	8	30.32	5	60.7	6.3	61.4	20.3	53.5	13.9	74.0	10.6	73.3	5.8
237	Pest	Pyrazolynate/Pyrazolate	40	30.33	2.58	75.1	8.1	82.1	19.7	88.1	15.1	91.4	48.0	NT	
238	Pest	Triflumizole	8	30.41	2.88	61.5	10.1	71.5	17.6	73.5	20.7	71.7	34.9	NT	
239	Pest	Indoxacarb	80	30.57	4.65	64.3	5.0	75.3	26.5	ND	ND	ND	ND	72.6	10.7
240	Pest	Fenoxaprop-ethyl	40	30.90	4.58	55.3	16.1	69.9	43.6	49.6	37.1	53.9	50.1	51.2	31.9
241	Pest	Oxaziclomefone	40	30.99	4.01	65.5	12.9	73.0	29.4	85.1	25.7	65.0	40.1	64.8	24.5
242	Pest	Benfuracarb	40	31.05	4.22	51.8	13.3	57.0	22.5	53.2	26.1	46.6	35.1	56.4	26.5
243	Pest	Imibenconazole	40	31.30	4.94	61.3	6.8	70.5	11.0	64.0	17.6	66.4	28.0	73.4	15.4
244	Pest	Quizalofop-ethyl	40	31.32	4.28	59.0	14.4	64.3	32.1	60.1	24.1	60.3	56.3	54.5	26.0
245	Pest	Benzofenap	40	31.32	4.69	68.0	8.1	73.6	22.7	72.0	16.7	70.3	31.7	73.6	16.4
246	PP	Fenofibrate[a]	8	31.45	5.3	49.9	14.7	59.0	37.7	37.9	43.4	58.5	59.7	38.7	36.2
247	Pest	Furathiocarb	40	31.54	4.6	59.7	13.6	73.4	34.4	79.7	66.3	66.1	40.7	61.2	15.3
248	Pest	Lactofen	80	31.59	4.84	54.5	12.2	58.7	44.2	ND	ND	ND	ND	NT	
249	Pest	Clomeprop	40	31.61	4.8	52.2	13.1	63.0	42.3	56.3	34.9	53.9	52.2	53.4	12.6
250	Pest	Cloquintocet-mexyl	40	31.90	5.03	50.5	10.9	50.8	27.1	57.4	30.0	55.8	45.2	NT	
251	Pest	Chlorfluazuron	40	32.97	5.8	35.5	10.2	37.6	15.6	41.3	11.0	48.8	38.5	47.1	12.9
252	Pest	Fenpyroximate	80	33.52	5.01	33.7	10.6	40.0	39.1	ND	ND	ND	ND	52.2	6.0
253	Pest	Avermectin B1a	80	33.83	4.4	48.5	47.9	58.8	62.6	ND	ND	ND	ND	NT	
254	Pest	Carbosulfan	40	33.95	5.4	7.7	-	11.7	30.7	ND	ND	ND	ND	NT	
255	Pest	Spinosyn A	4	34.52	4.5	34.5	14.8	31.1	42.8	65.2	19.4	55.2	61.5	53.7	13.9
256	Pest	Spinosyn D	8	34.92	4.5	40.7	14.8	26.8	33.5	56.2	15.2	31.4	22.6	46.6	18.6

257	PP	Salinomycin	8	35.51	8.53	73.9	6.8	63.6	22.0	89.1	9.0	76.6	6.2	82.6	14.6
1	Sur	Methamidophos-d6		-4.22	-0.78	66.1	28.8	77.8	16.2	NT	NT	NT	NT	75.8	12.9
2	Sur	Sulfamethoxazole-d4		9.83	0.66	81.1	9.9	85.4	9.7	NT	NT	NT	NT	48.5	18.3
3	Sur	Sulfadimethoxine-d6		15.14	1.6	85.3	8.0	86.1	5.9	NT	NT	NT	NT	51.8	18.2
4	Sur	Simazine-d10		20.64	2.3	77.7	16.7	79.0	27.5	NT	NT	NT	NT	76.8	12.3
5	Sur	Diflubenzuron-d4		27.44	3.7	69.4	8.9	69.3	27.2	NT	NT	NT	NT	83.0	12.3
6	Sur	Ethofenprox-d5		34.32	7.3	24.2	23.1	37.5	40.0	NT	NT	NT	NT	29.7	22.9
1	Mat	Cimetidine-d3		13.27	0.26	NT		99.1	3.8	NT		NT		64.1	10.2
2	Mat	Clothianidin-d3		14.42	-0.15	NT		99.7	2.1	NT		NT		49.4	22.6
3	Mat	Imidacloprid-d4		14.57	0.33	NT		102.6	2.9	NT		NT		77.8	10.6
4	Mat	Carbendazim-d4		17.13	1.51	NT		100.7	2.2	NT		NT		77.6	6.8
5	Mat	Carbofuran-d3		20.46	1.70	NT		99.4	2.7	NT		NT		86.5	4.5
6	Mat	Diuron-d6		23.32	2.70	NT		98.7	3.1	NT		NT		101.1	3.4

Pest: Pesticide; PP: PPCPs; Sur: Surrogate; Mat: Matrix; LOD: limit of detection; RT: retention time; log Pow: octanol-water partition coefficient; NT: not tested; ND: not detected

[a]: Detected in effluents used for recovery test

[b]: Recovery test was done using 5 effluents collected from 5 sewage treatment plants.

表 9 本研究に用いた固相

Code	Commercial name	Sorbent type	Sorbent weight, mg	Manufacture
C18	Sep-Pak C18 Plus	Octadecyl silica (ODS)	360	Nihon Waters
PS2	Sep-Pak PS2Plus	Styrenedivinylbenzene (SDB)	300	Nihon Waters
HLB	Oasis HLB Plus	Styrenedivinylbenzene (SDB) + N-vinylpyrrolidone	225	Nihon Waters
AC2	Sep-Pak AC2Plus	Activated carbon	400	Nihon Waters
PLS-3	InertSep PLS-3	Styrenedivinylbenzene (SDB) + N-methacrylate	200	GL Science

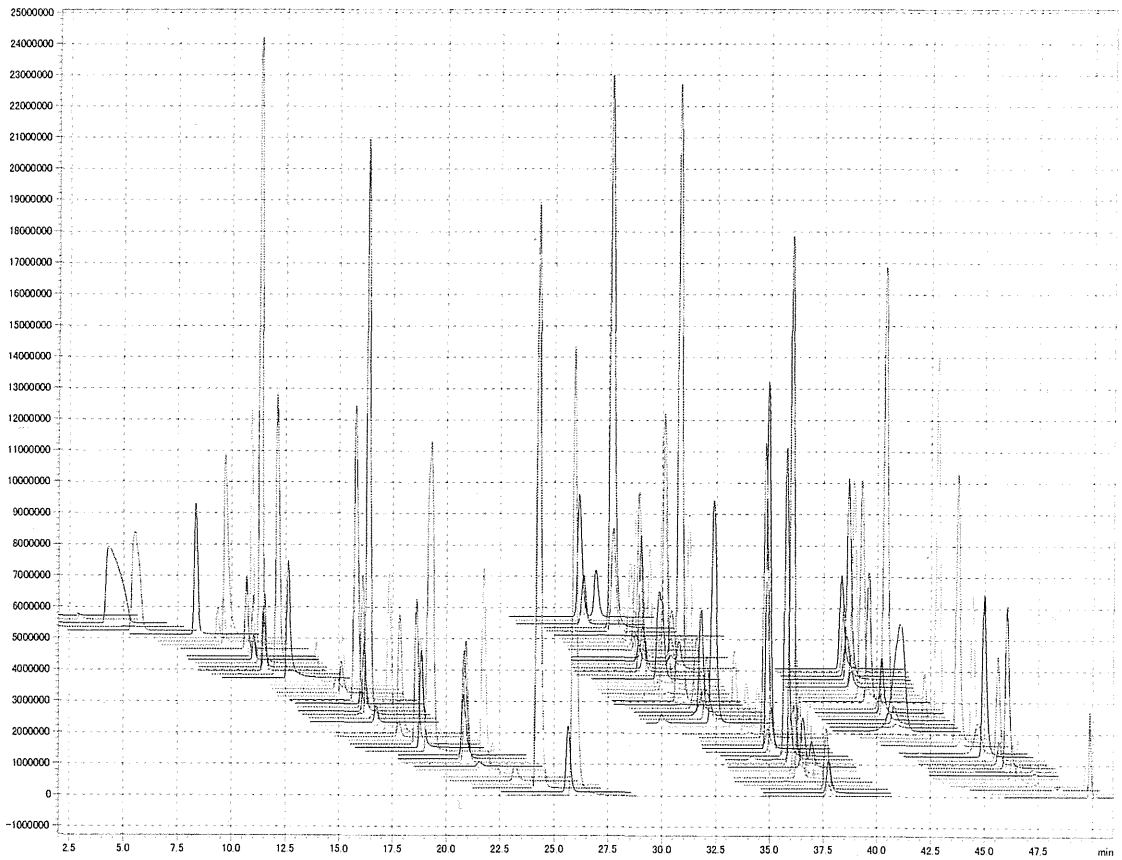


図 **1. 140** 農薬の **LC/MS/MS** 一斉分析クロマトグラム

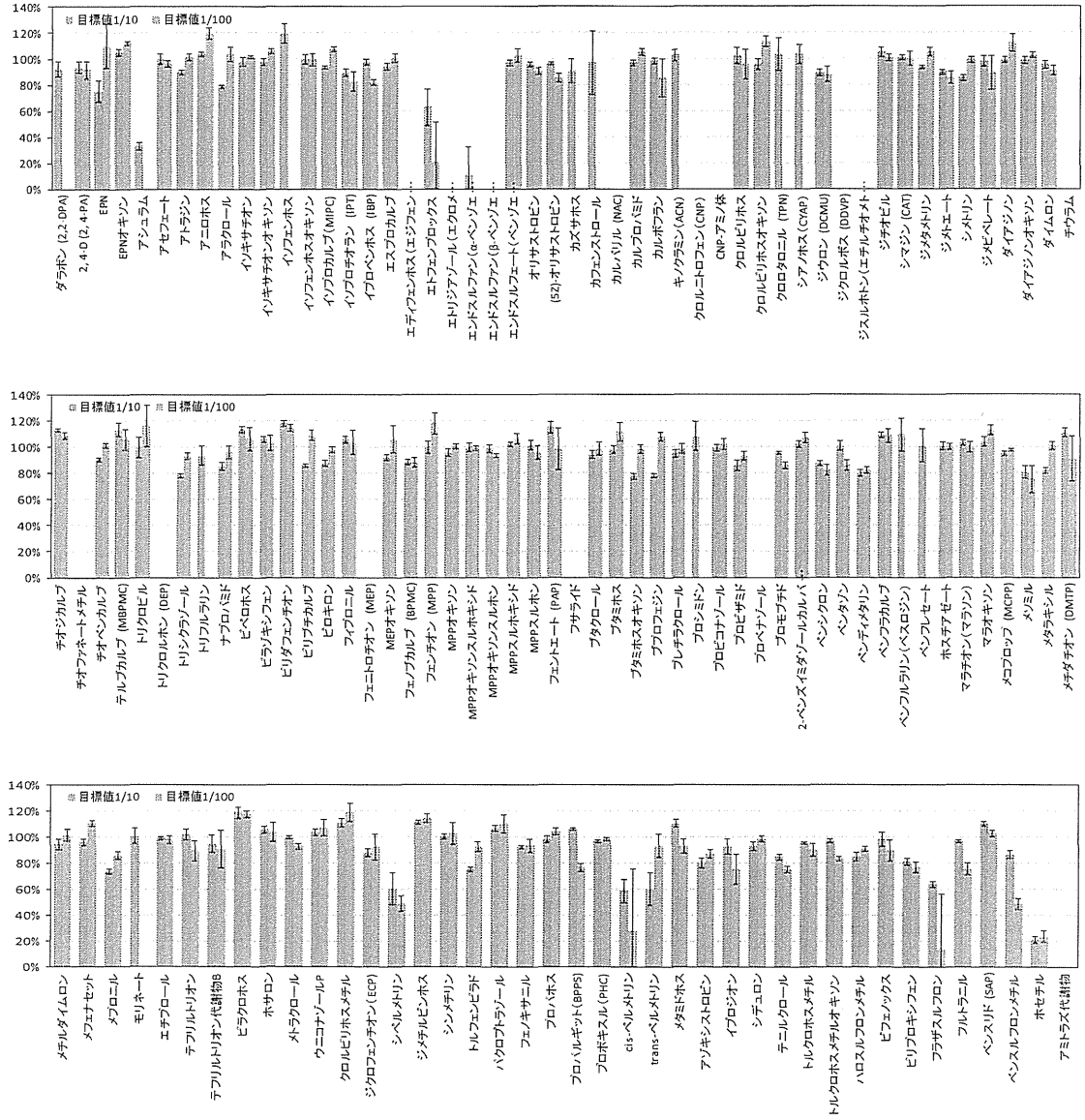


図 **2.** アスコルビン酸ナトリウムで脱塩素処理した水道水を用いた添加回収試験結果

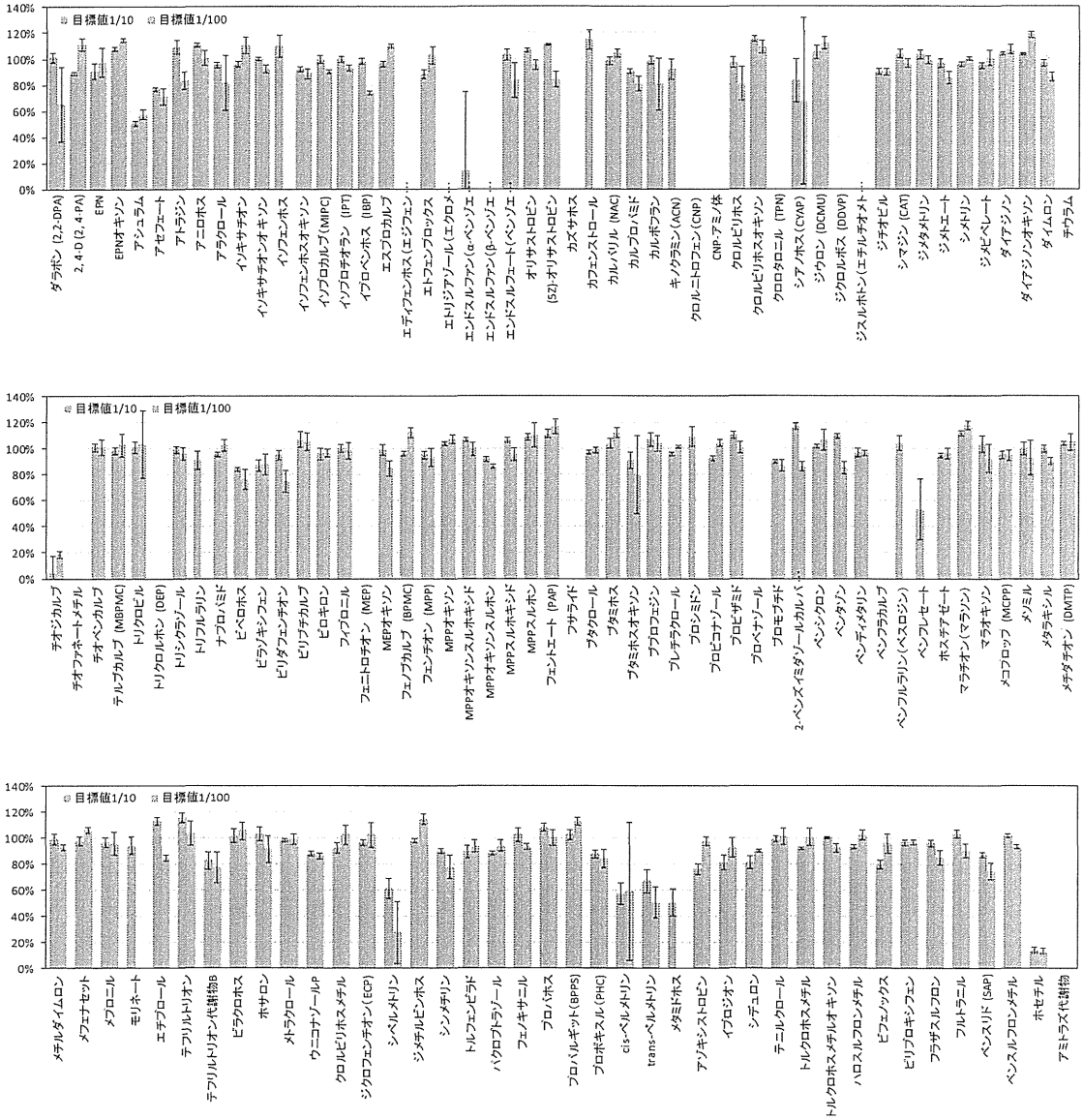


図 **3.** チオ硫酸ナトリウムで脱塩素処理した水道水を用いた添加回収試験結果

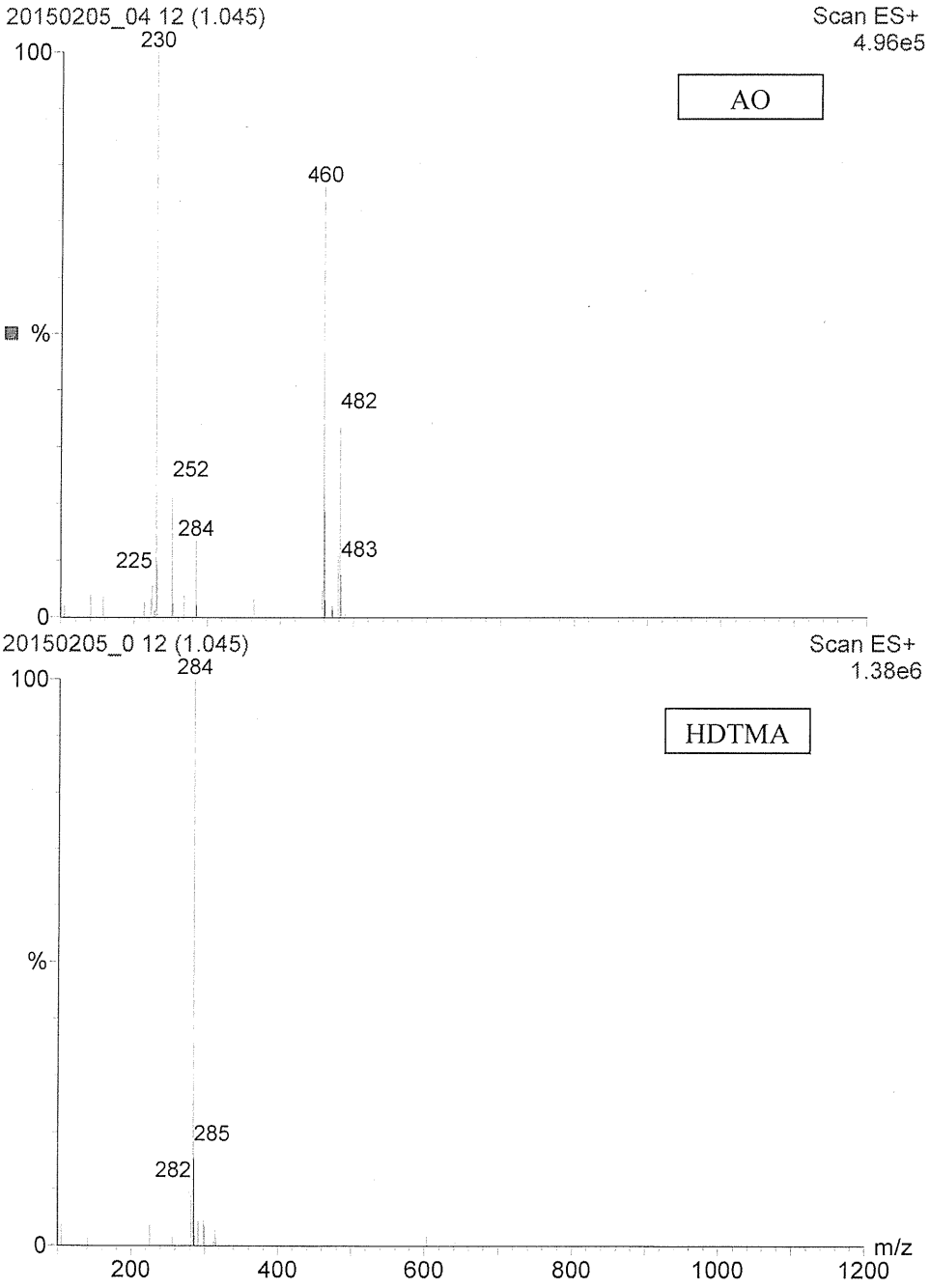


図 4. ヘキサデシルトリメチルアンモニウム=クロリド（HDTMAC）および N,N-ジメチルドデシルアミン=N-オキシド（AO）の FIA-MS の ESI マススペクトル

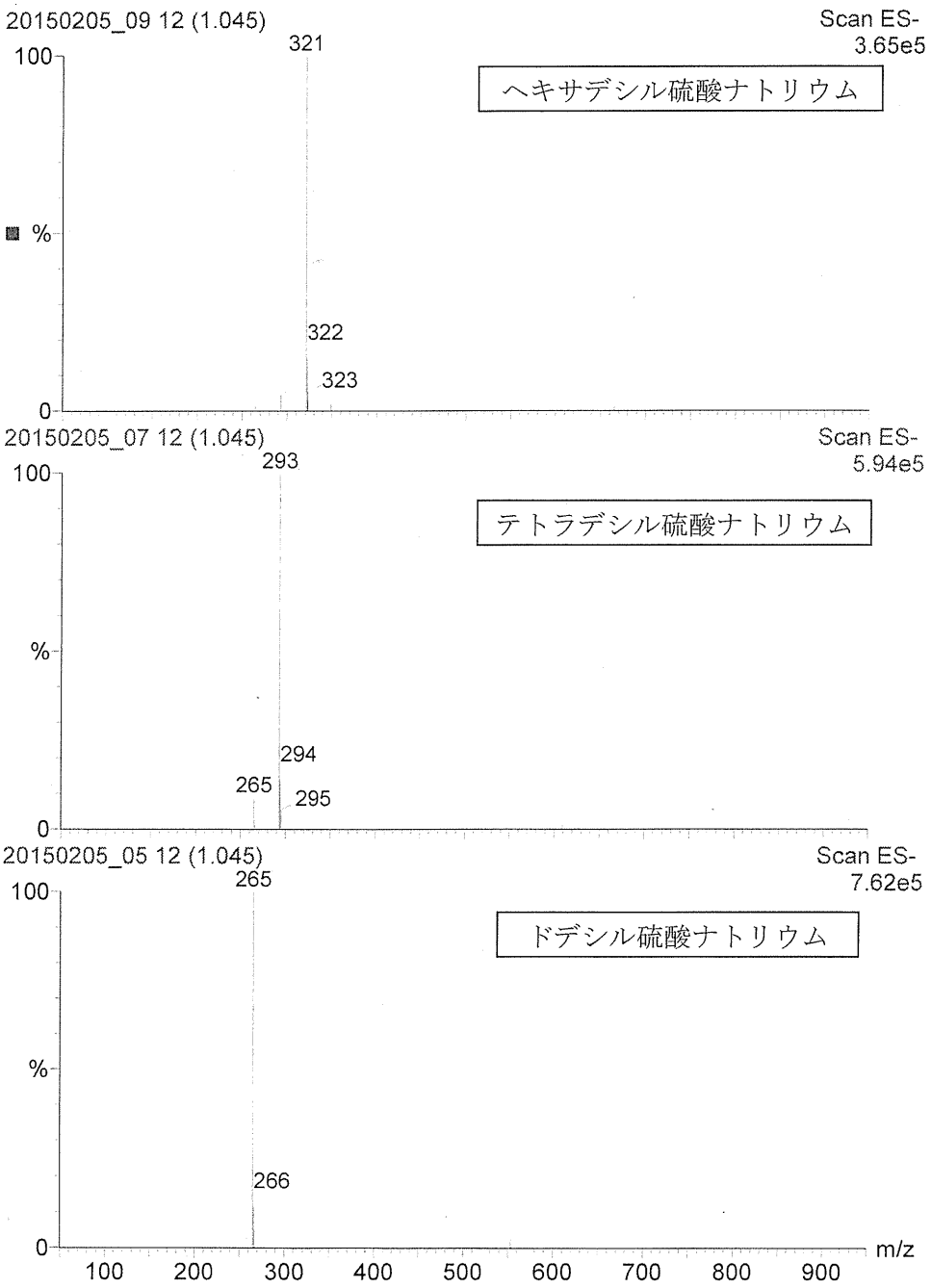


図 **5.** アルキル硫酸塩（ドデシル硫酸ナトリウム，テトラデシル硫酸ナトリウムおよびヘキサデシル硫酸ナトリウム）の FIA-MS の ESI マススペクトル

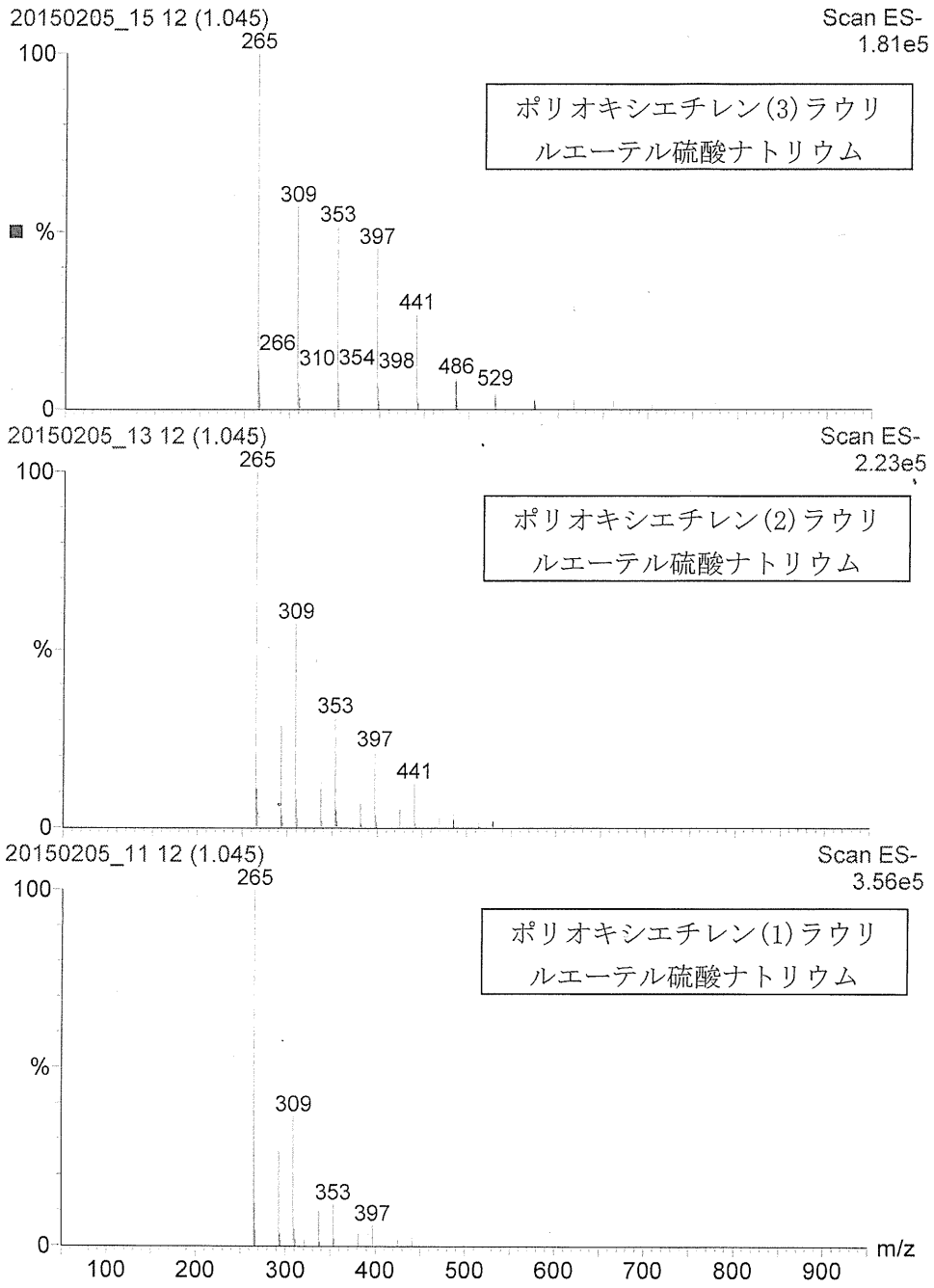


図 6. ポリオキシエチレンアルキルエーテル硫酸塩（AES，エマール 170J（ポリオキシエチレン(1) ラウリルエーテル硫酸ナトリウム），エマール 270J（ポリオキシエチレン(2) ラウリルエーテル硫酸ナトリウム），エマール 20C（ポリオキシエチレン(3)ラウリルエーテル硫酸ナトリウム））の FIA-MS の ESI スペクトル

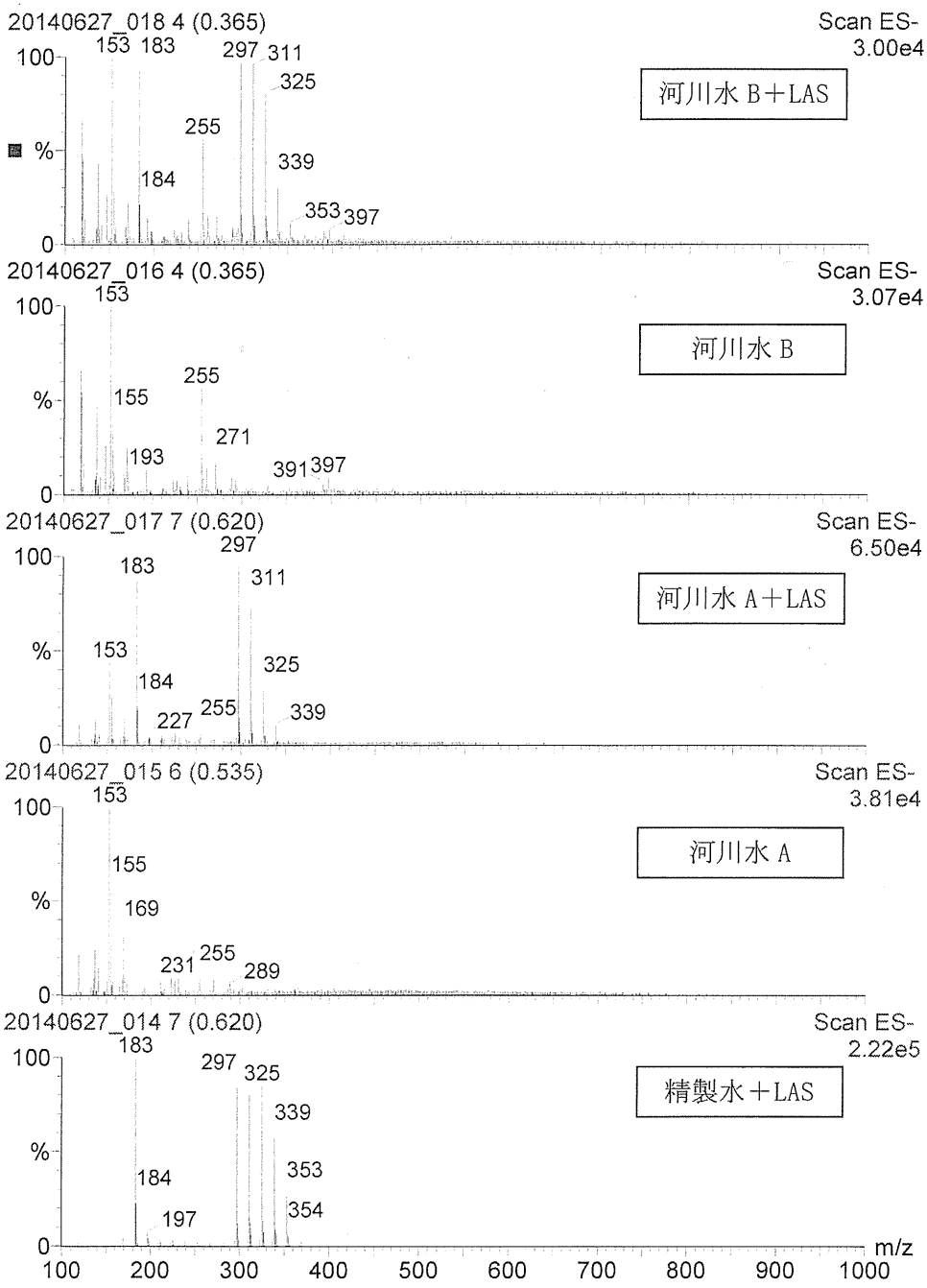


図 7. 市販の洗剤を河川水に LAS（C10-C14）添加した時の FIA-MS の ESI スペクトル
河川水：フレッシュ度 50%，LAS 添加濃度：1 mg/L

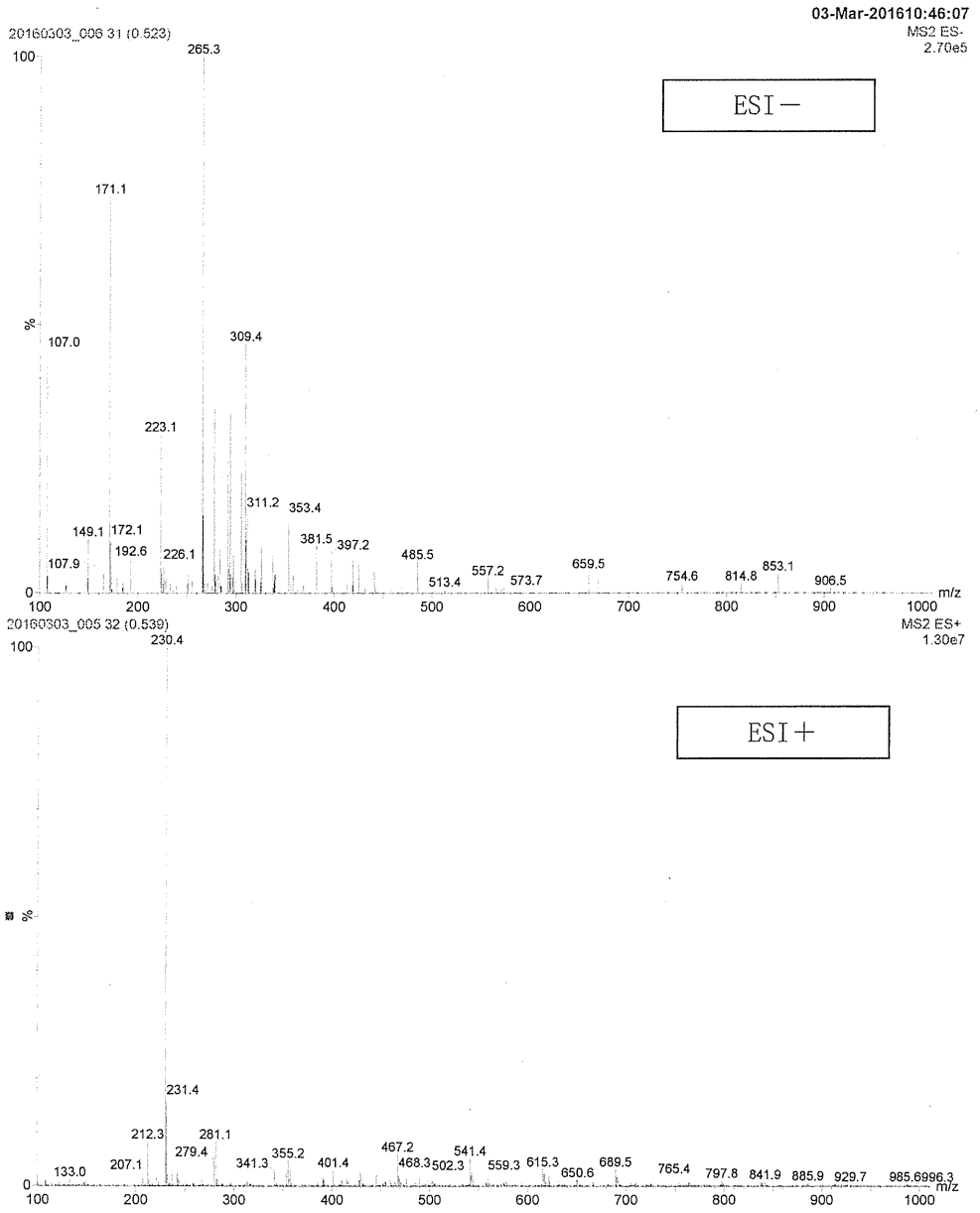
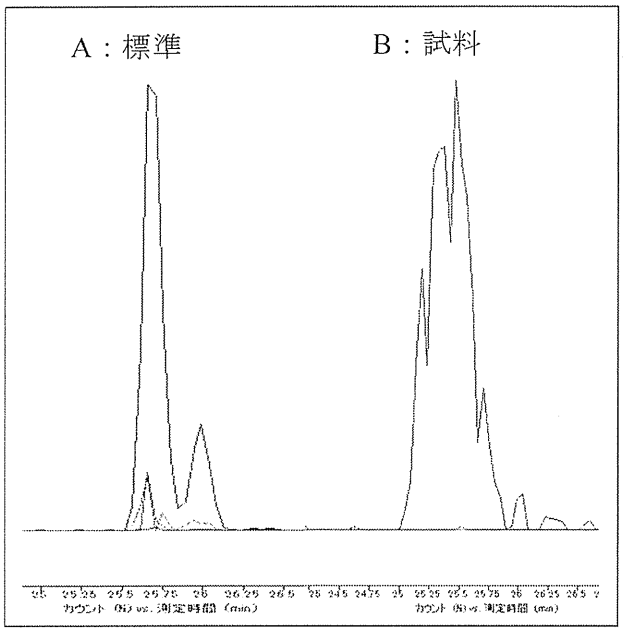


図 8. 市販の家庭用洗剤の FIA-MS の ESI スペクトル
家庭用洗剤の濃度：**10 mg/L**，成分表示（**31%**，**AO**，**AES**，**POE**，**AS**）



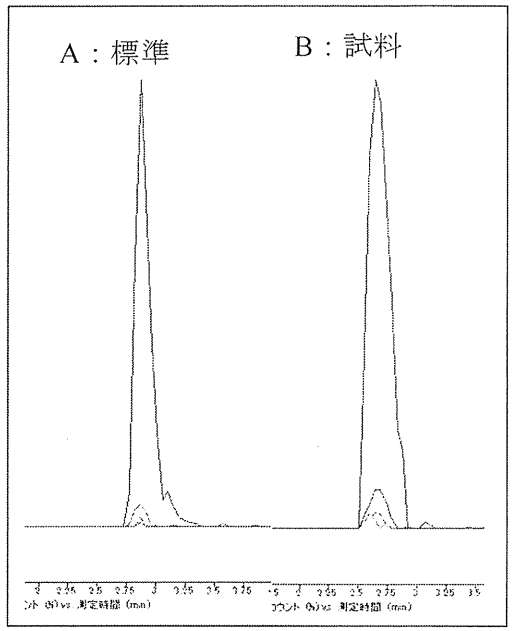


図 **9.** インソースフラグメントイオンによる誤検出の例（**Siduron**）（左）
図 **10.** インソースフラグメントイオンによる検出の例（**Metformin**）（右）

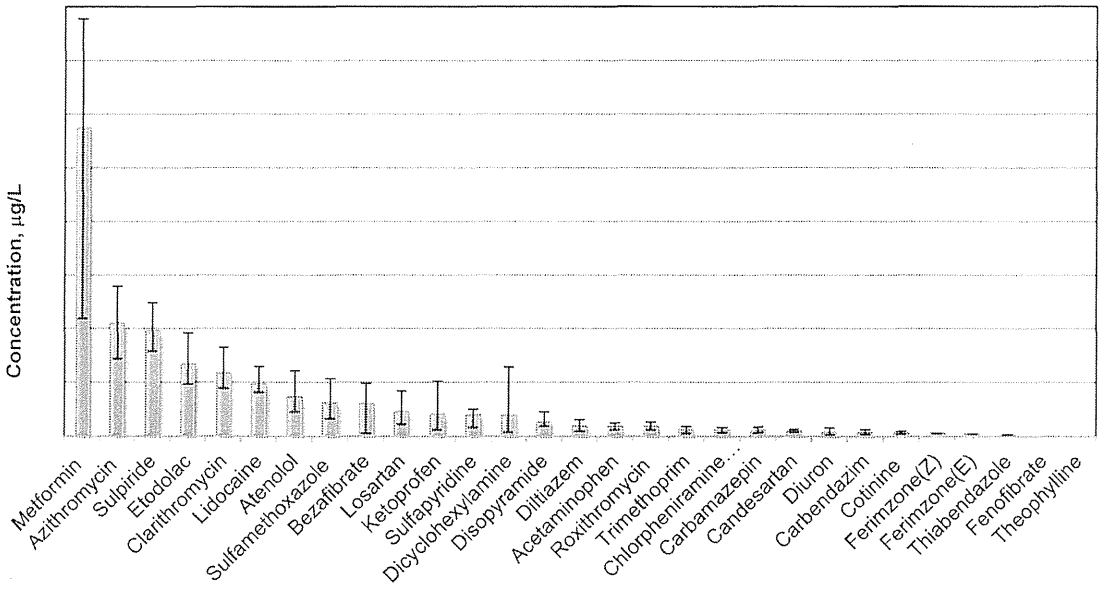


図 **11.** 北九州市内の **5** 下水処理場での検出物質

研究成果の刊行に関する一覧表

書籍

著者氏名	論文タイトル名	書籍全体の編集者名	書　籍　名	出版社名	出版地	出版年	ページ
なし							

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研究成果の刊行物・別刷