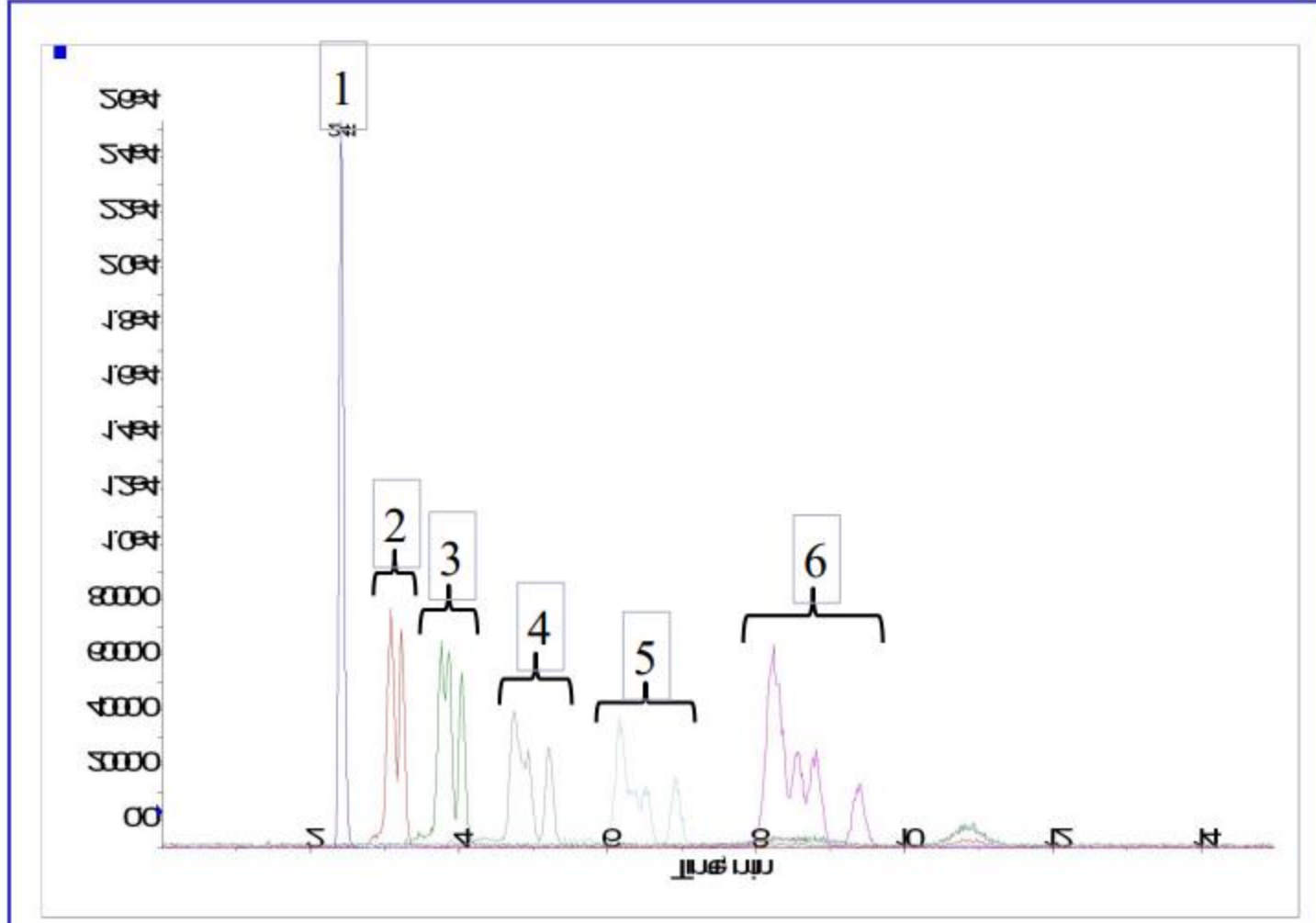


环境部征集了关于“增加与水生生物保护有关的水质环境标准项目”的意见“(第二次报告案),该意见经过审议。其中,公开了关于直链烷基苯磺酸及其盐(LAS)等的测定方法的提案。

测定方法中,检测器为LC/MS/MS,固相采用浓缩方法。此次使用InertSustain C18进行了分析,得到了良好的校准曲线和重现性。

(M.Takahashi, R.Ko)

标准液测定例①



HPLC条件

色谱柱 : InertSustain C18 HP(3 μm, 150 × 2.1 mm I.D.)
 流动相 : A) CH₃CN
 B) 0.1% HCOOH, 50 mM HCOONH₄ in H₂O
 流速 : 0.2 mL/min
 色谱柱温度 : 40 °C
 O A/B = 65/35, v/v
 检测器 : LC/MS/MS
 (4000 Q TRAP® : ESI, Negative, MRM)
 CUR 10, CAD 4, IS -4500, TEM 600, GS1 70, GS2 40
 注入量 : 5 μL

Analyte:

	Q1/Q3
1. Sodium Octylbenzenesulfonate(C8) (I.S.)	269/183
2. Sodium Decylbenzenesulfonate(C10)	297/183
3. Sodium Dodecylbenzenesulfonate(C12)	311/183
4. Sodium Dodecylbenzenesulfonate(C12)	325/183
5. Sodium Tridecylbenzenesulfonate(C13)	339/183
6. Sodium Tetradecylbenzenesulfonate(C14)	353/183

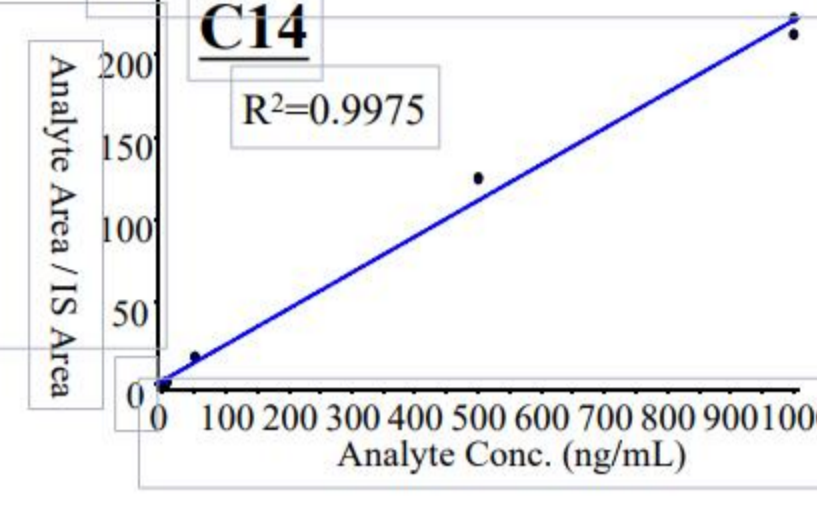
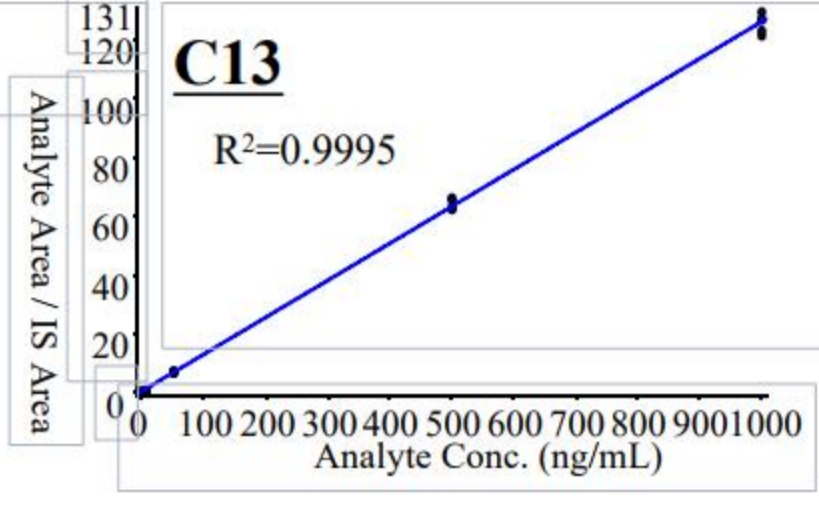
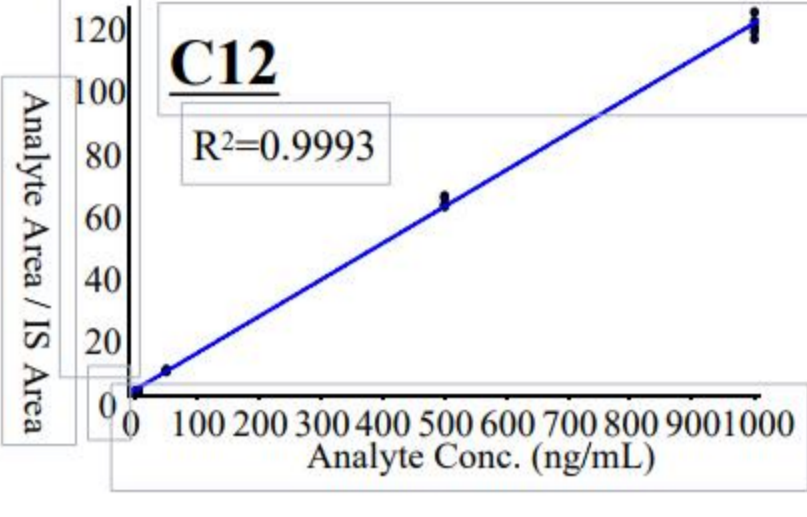
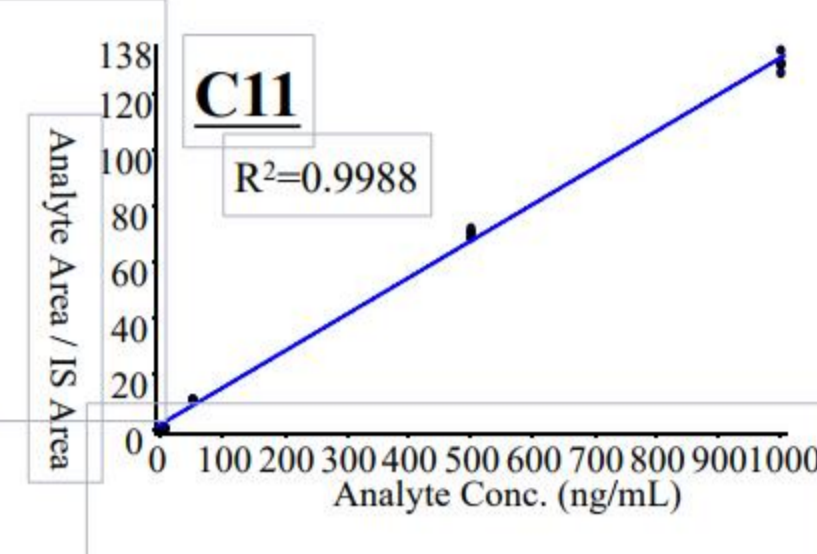
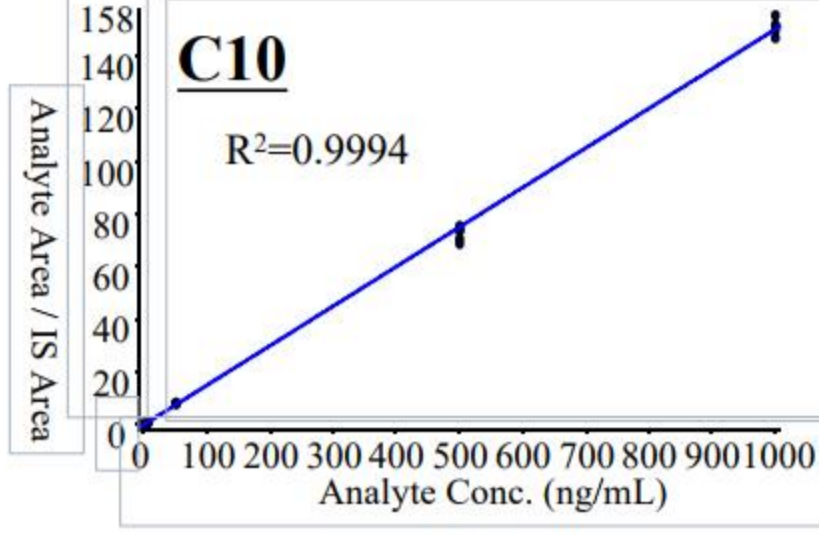
(in CH₃CN/H₂O=65/35 each 5 μg/L)

HPLC色谱柱

InertSustain C18 HP
 (3 μm, 150 × 2.1 mm I.D.)
 Cat.No. 5020-14415



	Regression equation	Correlation coefficient	RSD, % (50 ng/mL, n=5, Area)
C10-LAS	y=0.15x-0.0284	0.9994	1.2
C11-LAS	y=0.13x+2.31	0.9988	1.4
C12-LAS	y=0.117x+1.07	0.9963	2.7
C13-LAS	y=0.125x+0.672	0.9965	2.7
C14-LAS	y=0.219x+2.56	0.9975	2.0

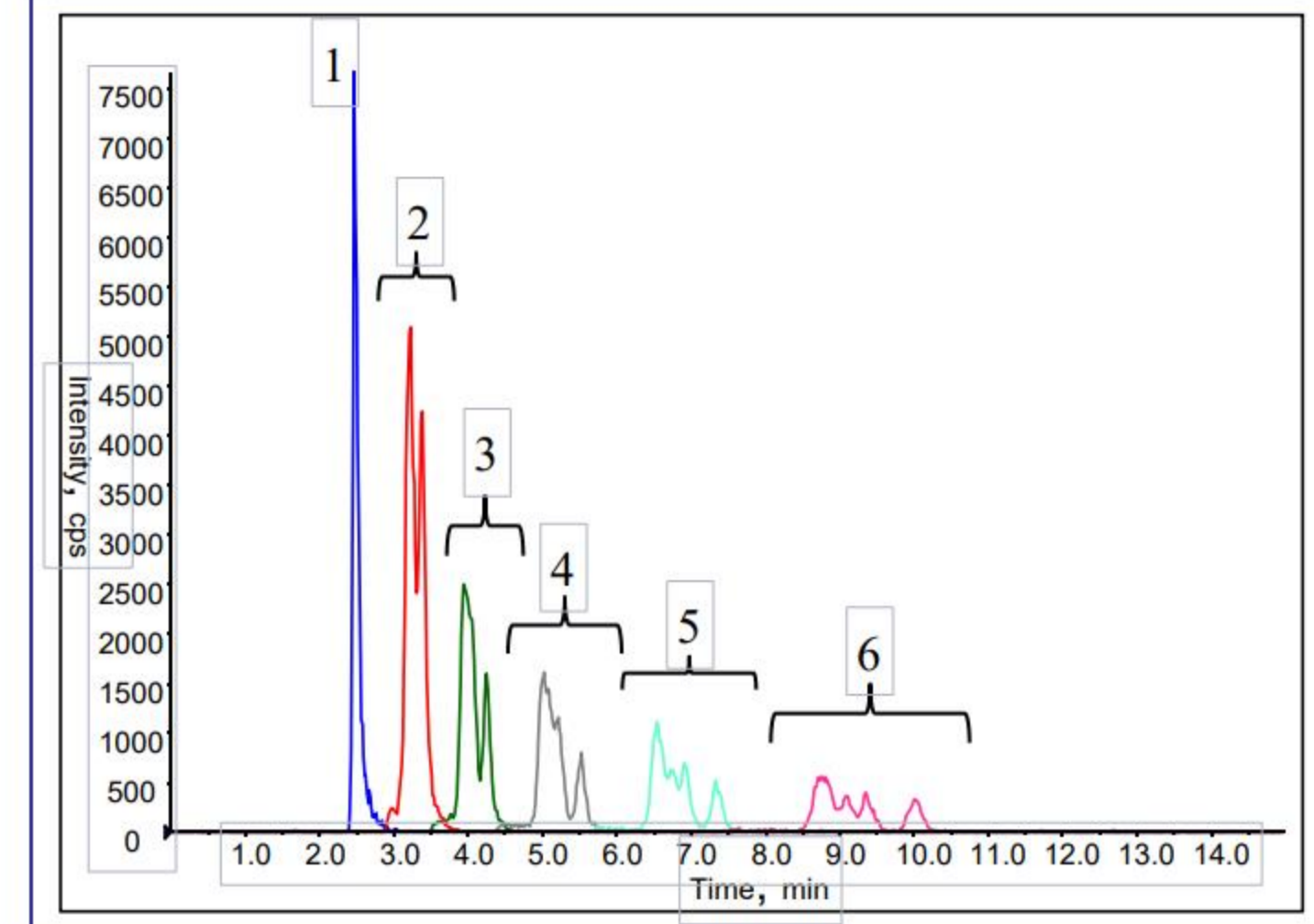


検量線

<http://www.gls.co.jp/hplc.html>

GL Sciences LC Technical Note

标注也测定例②



由于在LC/MS/MS的机种中经常用于环境分析的API 3200QTRAP®收到很多询问,所以这次我将介绍API 3200 Q Trap的分析结果。

Analyte:

	Q1/Q3
1. Sodium Octylbenzenesulfonate(C8) (I.S.)	269/170
2. Sodium Decylbenzenesulfonate(C10)	297/183
3. Sodium Dodecylbenzenesulfonate(C11)	311/183
4. Sodium Dodecylbenzenesulfonate(C12)	325/183
5. Sodium Tridecylbenzenesulfonate(C13)	339/183
6. Sodium Tetradecylbenzenesulfonate(C14)	353/183

(in CH₃CN/H₂O=65/35 each 5 μg/L)

HPLC条件

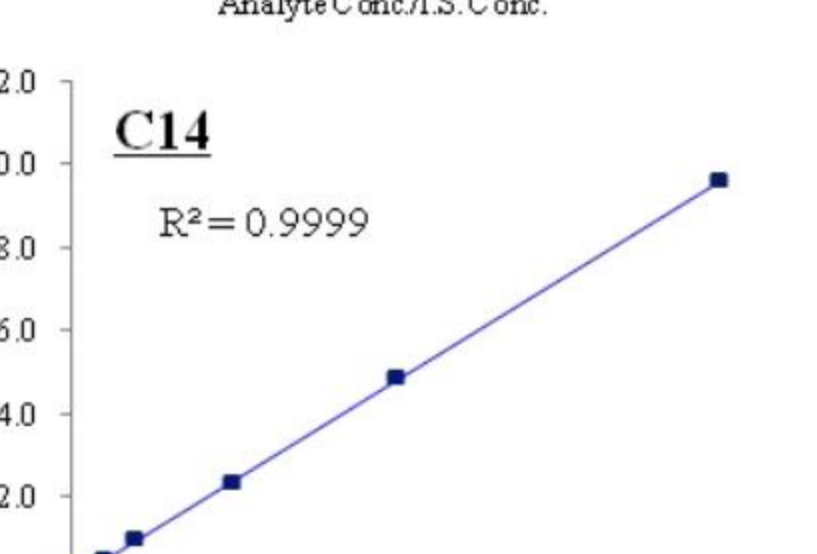
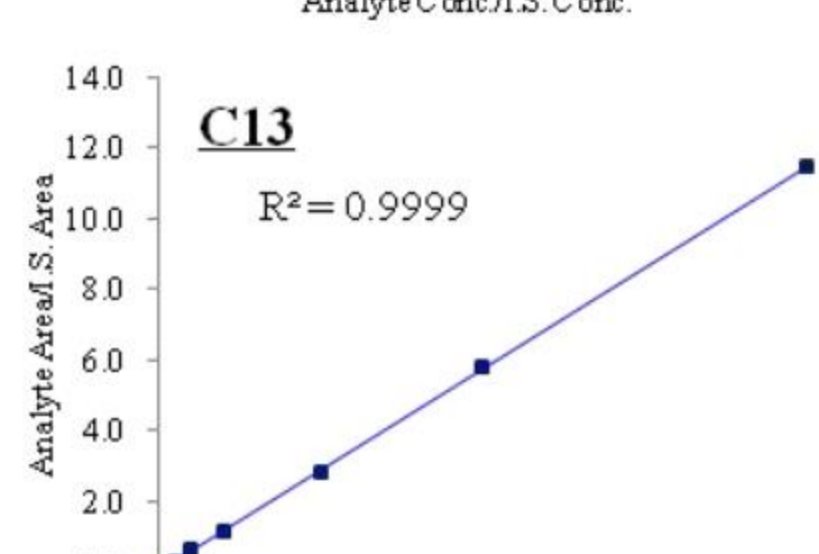
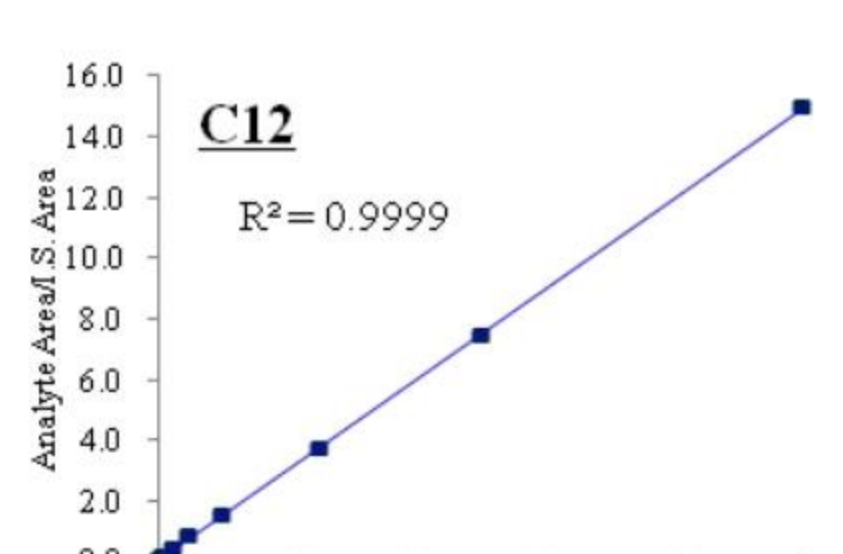
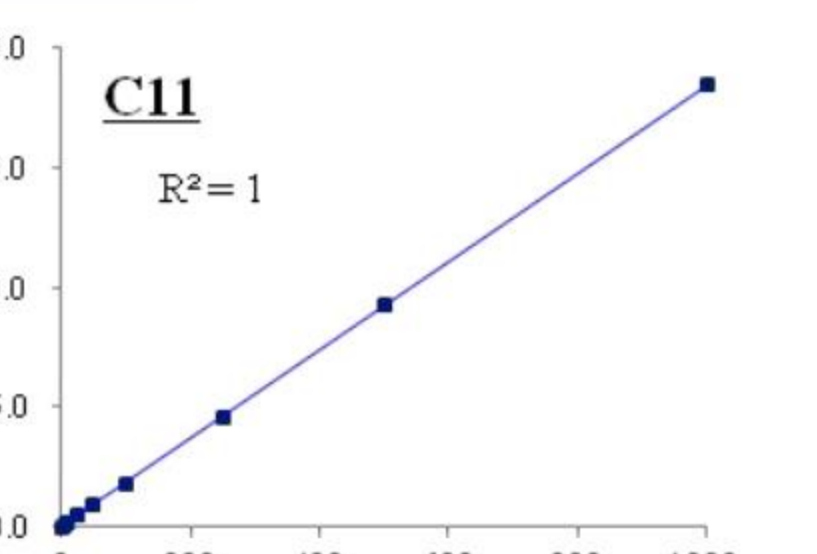
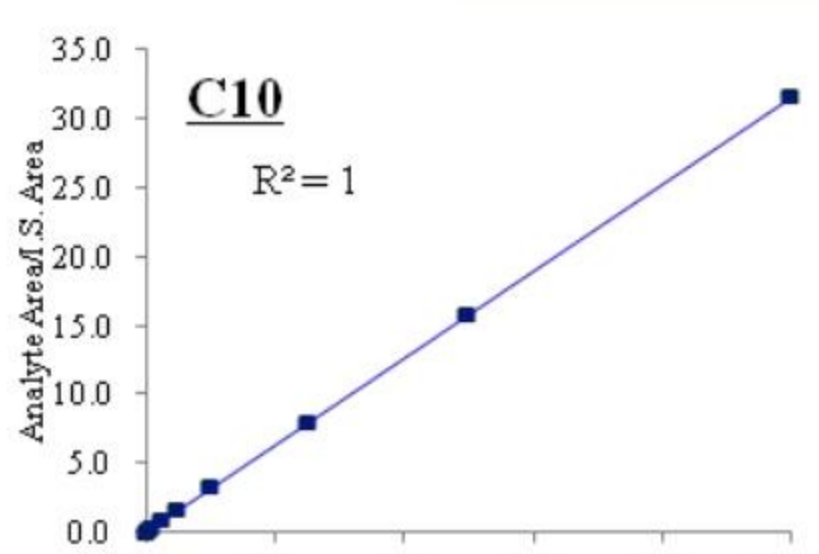
检测器 : LC/MS/MS
 (3200 Q TRAP® : ESI, Negative, MRM)

CUR	CAD	IS	TEM	GS1	GS2
10	4	-4500	700	50	50

其他条件和标注液测定例①相同

校准曲线

	Regression equation	Correlation coefficient	RDS, % (each60μg/L, n=5, Area)
C10-LAS	y=0.0315x+0.0368	1	3.79
C11-LAS	y=0.0184x+0.0112	1	1.49
C12-LAS	y=0.0149x+0.0116	0.9999	2.86
C13-LAS	y=0.0114x+0.0249	0.9999	3.78
C14-LAS	y=0.0096x+0.0067	0.9999	3.19



分析装置

Smart HPLC® LC800

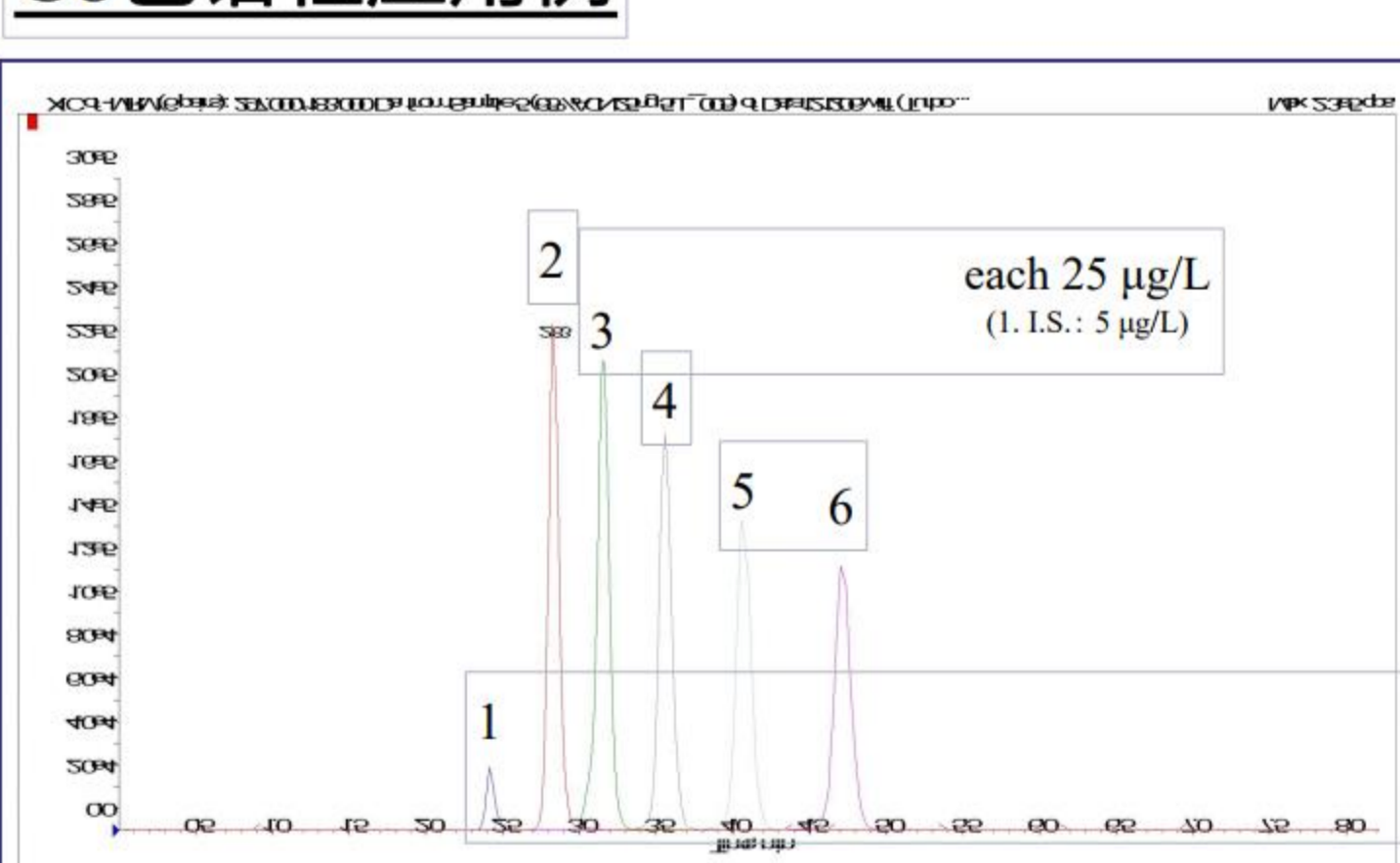


API 3200 Q TRAP®
 (Applied Biosystems社)



GL Sciences LC Technical Note

C8色谱柱应用例



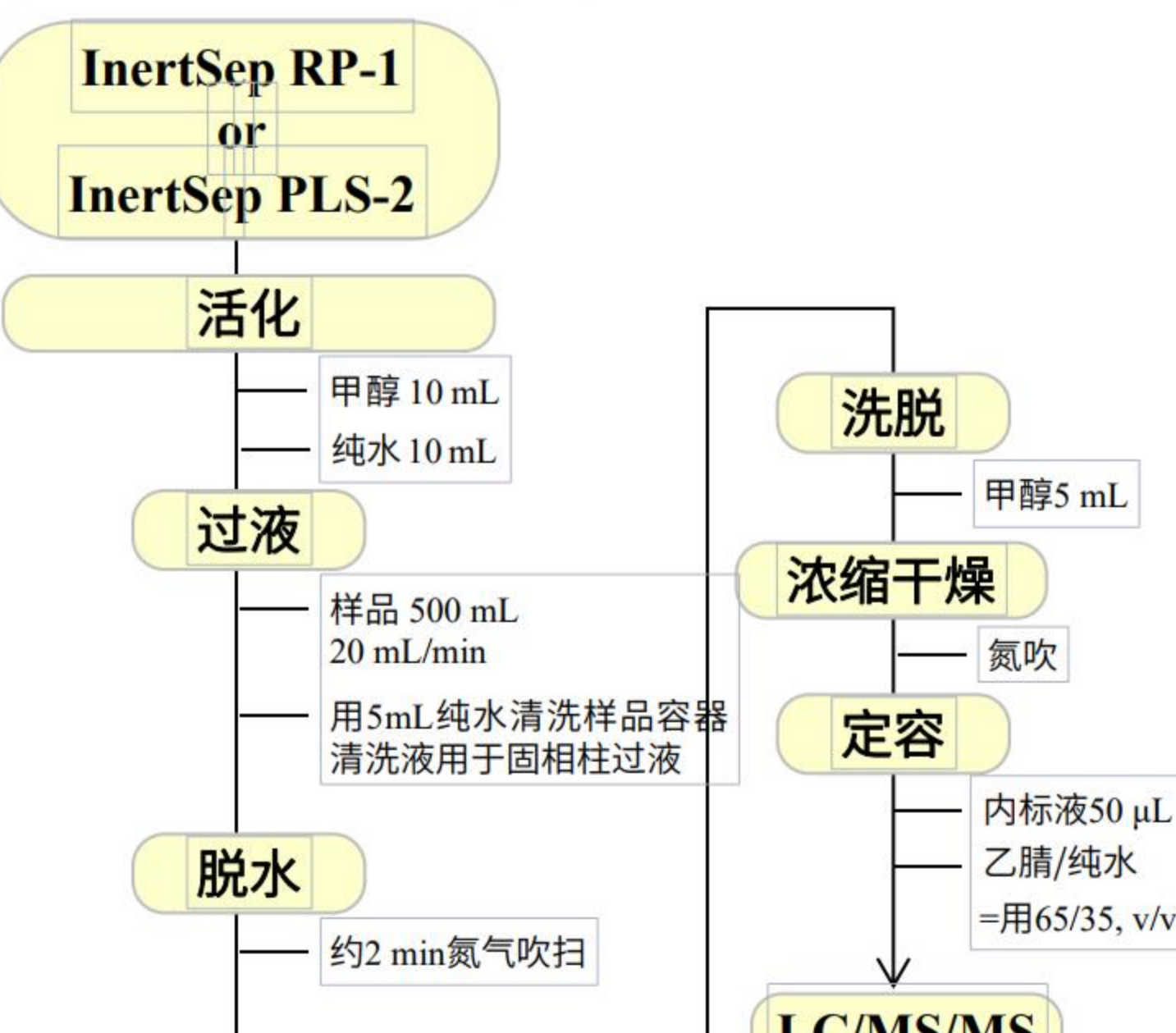
当使用标准C18柱时,每个线性烷基苯磺酸盐的异构体在一定程度上被分离。用较少的保留性的C8柱得到了左侧显示的色谱图。由于疏水作用相对较弱,每个化合物都以单峰形式洗脱,并且峰面积可以更容易地计算。

HPL条件

色谱柱 : Inertsil C8-4 (3 μm, 150 × 2.1 mm I.D.)
 Cat.No. : 5020- 03975

其他条件和标准测定例①相同
 测定装置为API4000Q TRAP®。

固相萃取前处理例



固相萃取小柱:
 InertSep RP-1, InertSep PLS-2



InertSep SlimJ RP-1 230mg 50支装	Cat. No. 5010-65730
InertSep RP-1 250mg/6 mL 30支装	Cat. No. 5010-27000
InertSep SlimJ PLS-2 265mg 50支装	Cat. No. 5010-65721
InertSep PLS-2 265mg/6 mL 50支装	Cat. No. 5010-27430