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(21) 10-2002-0002770 (22) 2002 01 17	(65) (43)	2003-0062529 2003 07 28

(73) () 44-3

44-3

(72) A124-801

151 107-1102

(74)

(54) 가 ,

(*Hovenia dulcis* Thunb.) 가

14

1.	가			
2.	가			UV
RI	.			
3.		1	SEC	MALLS
4.		2	SEC	MALLS

5.		3	SEC	MALLS
6.		4	SEC	MALLS
7.		5	SEC	MALLS
8.		1	GC	.
9.		2	GC	.
10.		3	GC	.
11.		4	GC	.
12.		5	GC	.
13.	가		LDH	.
1:	2:	4mM		
3:	4mM+		200 μ g/M ℓ	
4:	4mM+	가	200 μ g/M ℓ	
14.	가			
1:	2:	4mM		
3:	4mM+		200 μ g/M ℓ	
4:	4mM+	가	200 μ g/M ℓ	
15.	가	/LPS	LDH	.
1:	2: D-	500 μ M + LPS 1 μ g/M ℓ		
3: D-	500 μ M + LPS 1 μ g/M ℓ +		200 μ g/M ℓ	
4: D-	500 μ M + LPS 1 μ g/M ℓ +	가	200 μ g/M ℓ	
16.	가	/LPS		
1:	2: D-	500 μ M + LPS 1 μ g/M ℓ		
3: D-	500 μ M + LPS 1 μ g/M ℓ +		200 μ g/M ℓ	
4: D-	500 μ M + LPS 1 μ g/M ℓ +	가	200 μ g/M ℓ	
17.	가		LDH	.
1:	2:	1mM		
3:	1mM+		200 μ g/M ℓ	
4:	1mM+	가	200 μ g/M ℓ	
18.	가			
1:	2:	1mM		
3:	1mM+		200 μ g/M ℓ	
4:	1mM+	가	200 μ g/M ℓ	
19.	가			
20.	가			
1: 40%	(0.3mM) +	(0.3mM)		
2: 40%	(0.3mM) +		(0.3M ℓ , 500mg/M ℓ)	
3: 40%	(0.3mM) +	가	(0.3M ℓ , 500mg/M ℓ)	

가

B

가

1

가

3

5

40

가

-10

가 가 가 , D- , LPS, [(Recknagel) (CCl₄) (Pharma
 col. Rev., 19, 145-208. 1967), (Alpers, et al.) (Mol. Pharmacol., 4, 566-573, 1968)
 (Slater) (Slater, T. F.(Eds), Academic Press, London, pp. 243, 1982)]. D-

amide) Enzymol. 186, 675-680 1990)]. LPS(Lipopolysacch (Wendel A.) (Methods . D- LPS (TNF-) (O₂) [(Tiegs G. et al) (1989. Bi ochem. pharmacol., 38, 627-631 1989)]. (Toranzo et al) (*Toxicology and Applied pharmacology* 40 , p415-425 1977) , BB-3,4-

[(Weiner et al.) [*Ethanol and the liver in the liver Biology and Pathology*, ed. Arias, M., Jakoby, W., Popper, H., Strachter D., and Shafritz, D. A. Raven Press Ltd., New York, p. 1169 1988)].

가 가 , C-C
ALDH , ,
[(Tipton, K. F. et al) (Cellular and intracellular distribution of aldehy-
de dehydrogenases. in *Human metabolism of alcohol*. Vol. 2 p. 105-116 CRC Press Boca Raton. 1989)]
ALDH 가

(lactate dehydrogenase;LDH) 가 가 가
 (Yoshida, T. et al; *Eur. J. Appl. Physiol.*, 56, p7, 1987). 가 (LD)
 H), (aspartate transaminase;GOT), (alanine transaminase;GP
 T)가 가 가
 (Cho, T.S. et al: *Yakhak Hoeji*, 39, p548, 1995; Gay, R.J. et al: *Clin. Chem.*, 14, p740, 1968)

가 120 (Yoshikawa et al.) 10 (*Chem. Pharm. Bull.* 43(3) : 532 - 534. 1995) 30% 가 50% FDA
 가 , (Hase et al) (*Chem. Pharm. Bull.* 20(4) 381-385 1997) 50%
 가 D- /
 가 (Yoshikawa et al) (*Chem. Pharm. Bull.* 41(10) : 1722 - 1725; 1993 Phytochemist
 ry. 34(5) : 1431 - 1433.)

가

가

가

(*Hovenia dulcis* Thunb), 50-800m
, , , , ; *Hovenia dulcis* Thunb(, , , ; *Hovenia dulcis* var. *latifolia* Nakai(, , , ; *Hovenia dulcis* var. *koreana* Nakai(, , , ; *Hovenia dulcis* var. *tomentella* Makino(, , , ;)가 10-15m, 30-40cm 20m, 80cm , , , , 漢名
(けんぼなし) (Uehara K. I., *JUMOKUDAITSUSETSU*, Yumei Press. 2nd Ed. pp1072-1074, 1960).

가

4	가	가	(<i>Hovenia dulcis</i> Thunb.)	가	,	1
						가
			(<i>Hovenia dulcis</i> var. <i>latifolia</i> Nakai.), <i>tella</i> Makino, <i>Hovenia dulcis</i> var. <i>latifolia</i> Nakai)			(<i>Hovenia dulcis</i> var. <i>tomen</i>
	가	,		,	,	
1	가		(1)	가	가	1
					2	(2)
1	1	가	가		,	가
1	(<i>Hovenia dulcis</i> Thunb.)	가	가	1	5	,
1	3	,	1.5	100	150	3
15	48	,	30	12	,	100
					,	120
2	2	가	가	100%		30
						,
3	3	,	1	3	4	2
8	8	,	4	가	,	
100%	100%					

, 0 5

AG 50W-x8, (Amberlite) IR-120, (Dowex) 50W-x8
 ; (Amberlite) IRC-50, - (Bio-Rex) 70, (Duolite) -436
 ; (Amberlite) IRA-67, (Dowex) 3-x4A
 ; AG 2x8, (Amberlite) IRA-400, (Dowex) 2-x8

;	CM-	, SE -	;	;	, DEAE	,	, G-25
G-50			;	가		,	
			,	가	,	CL	A
	(Fractogels)			(Toyopearl)			가
					DEAE	가	,
		DEAE-650C	.	.		,	
,	.	,	,	,	O M		,
,	.	,	,	,	68,040, 36,440	가	, 0.1 M
,	.	,	,	,		22,500, 233,300, 200,700	
가	0.2 M	,	,	,			
840	가	,	0.3 M	,			
			가	,			
				3 M	,		
				가	,		
88,610, 79,190					,		
					,		
		216,500			,		
					20,000		

(Spectra system p2000), 가 (TSK PWH, Tosoh), RI- (Shodex SE71), SEC(Size Exclusion C chromatography) TSK 3000pw, 4000pw, 5000pw(7.8×300mm, Tosoh) , MALLS(

, Dawn DSP-F, Wyatt Technology))
 NaNO_3 0.5ml/
2:

(LDH) () 340-UV ^3H - (5 $\mu\text{Ci}/\text{plate}$) RNA
 ^3H - (15 $\mu\text{Ci}/\text{plate}$) HP 5890 가 (Gas chromatography head space)
FID (Flame Ionization Detector) (Gas chromatography head space)

가 1: 가 2 () 가 1kg HD5-A 190 () 5 SFDS
120 3 (1.5) 가 (Whatman No. 2,) (12.2g)
M24L ;) 가
2: 가
(1) 1 12.2g HPLC 3 1 3
0.63g (UNION 5KR ,) 10 20 (4,000rpm)
(2) 1 2 12.2g HPLC 3 1 3
(Whatman No.2,) 4
, (100Mℓ) 가 , (SFDSM24L,)
(3) (1) (2) 가
30 1g 100ml
AE-650C 160 Mℓ 254nm UV (Toyo pearl R, (Tosoh ,) DE
,) 가 (Biologic LP, BIO-RAD : RI-10 , EYELA
, (35cm , 2.5cm , Glass Econo- , BIO-RAD ,)
500Mℓ 100ml DEAE-
650C 가 0M, 0.1M, 0.2M, 0.3M, 3M 500Mℓ
, 2ml/ 0M, 0.1M, 0.2M, 0.3M, 3M
가 1, , 3, 4 5 , RI 0.3M
2 UV
0 1,200 3 () 32mm, 2,00
ft SFDSM24L, , , (100ml/
3:
2 (3)

on chromatography) MALLS 1 HPSEC(High performance size-exclus
1 가 , 2 7 ,
22,500, 233,300, 200,700 , 3 2 32,840 , 4 216,500
88,610, 79,190 5 ,

1 5
(Dubois, M.et al.)
(Anal. Chem. 28, 350 356. 1956)] , 1

[1]

	(ppm)				
	1	2	3	4	5
	1,514	13,720	23,488	9,069	18,372

[- Z]						
1	1	3.14	0.88	-	0.57	0.57
2	1	0.92	-	1.4	2.14	-
3	1	-	-	0.69	1.23	0.61
4	1	0.31	-	-	2.9	-
5	1	-	6.84	-	1.5	1.45

00	1	,	,	,	,	,	68,040, 36,440
	,	2	,	,	,	,	22,500, 233,300, 200,7
		,	3	,	,	,	32,840
	,	4	,	,	,	,	88,610, 79,190
,	5	,	,	,	,	,	216,500
가							.

(Dynamic Liver slice cluture)

(Chang, I. M., et al: Drug and chemical toxicology. 6(5): 443 - 453, 1983)

(1)

BALB/c (SD) 21-24 , 40-80%

(2)

가

CO₂ (95%/5%) (dynamic organ culture incubator) (su
 rface culture) 가 (4mM), (1mM), - (500 μM)
 5 O₂ /CO₂ (95%/5%) LDH ()
 가 (3) (LDH)

(3)

, - 가 LDH UV (340-UV)
 가 , 가 (LDH)
 13
 15 17 (LDH)
 가
 (4) (Bonney et al) (Some characteristics and function of adult rat liver primary culture, in Gene Expression and Carcinogenesis in Cultured Liver, Gerschenson, E and Thompson, E. B.(Eds), Academic Press, New York, pp. 24-45, 1975)
 20% ^3H - (5 $\mu\text{Ci}/\text{ml}$, 0.38mM) 가 2
 (TCA) 가 2,000 $\times g$ 10 10% TCA 2 1N
 (digestion) 가
 14
 16
 18
 (5)
 40% (w/v) 10 ml/kg 가
 1 4
 (Sigma 332, UV, Endpoint method,)
 40% 1 19 1/2가
 4
 ——————
 가 (0.3mM) 1 0.3ml(500mg/ml) 4 40%
 0 0.154M KCl 0.1M
 4 9,000 $\times g$ 30 (pH 7.4)
 4 110,000 $\times g$ 1
 340nm 3 2-3mg 55mM
 , 20
 가
 []
 []
 2 2g
 1g
 []
 2 100mg
 100mg
 100mg

2mg
 [2] 100mg
 100mg
 100mg
 2mg
 [2] 100mg
 pH
 2ml
 pH 7.5
 [, , , , ,
 . , , , , ,
 .
 , , , , ,
 60
 60
 [: 30 %, 15 %, 20 %,
 : 7 %, 8 %, 7 %,
 : 3 %, 0.5 %, 0.5 %]
 5~10%, 0.05~0.3%, 0.005~0.02%, C 0.1~1% 가 79~94%
 , 85~98 20~180
 가 0.5~0.82% 1 : 4

(57)

- 1.
- 2.
3.
(*Hovenia dulcis* Thunb.) 1 4 가 가

3 , O M
5. 68,040 D, 36,440 D
3 , 0.1 M
22,500 D, 233,300 D, 200,700 D

6.

3

0.2 M
32,840 D

7.

3

0.3 M

88,610, 79,190

8.

3

3 M

216,500 D

9.

10.

1

4

가 가

가

;

가

;

3

8

11.

10

,

12.

10

가

DEAE

13.

14.

3

8

,

15.

14

,

16.

3

8

가

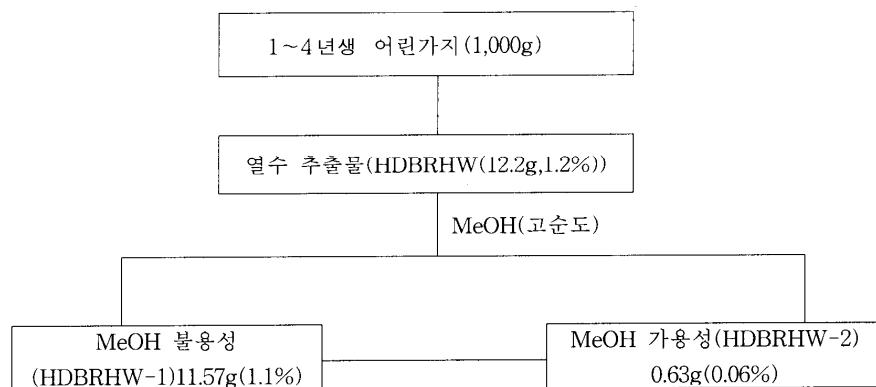
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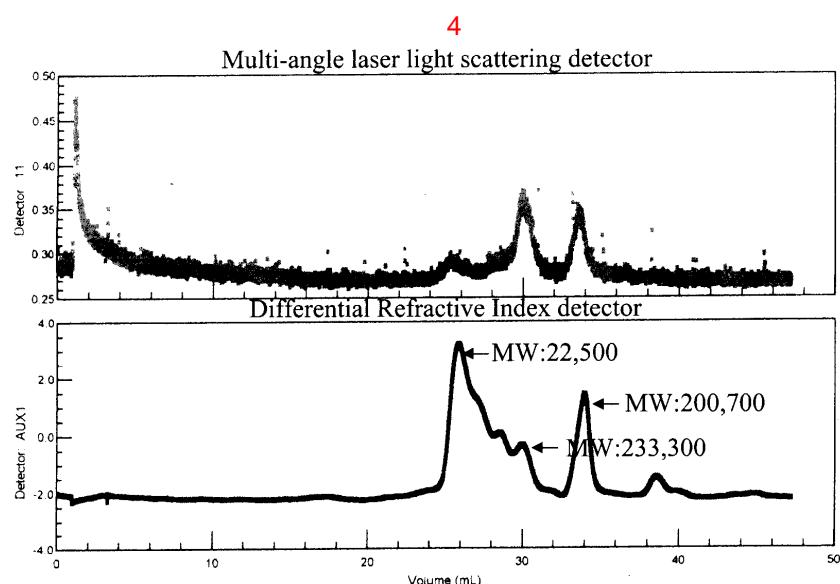
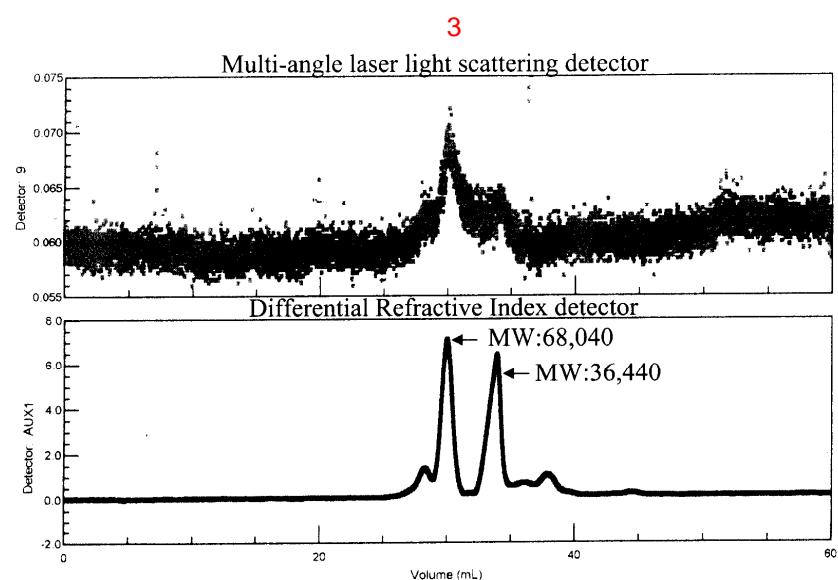
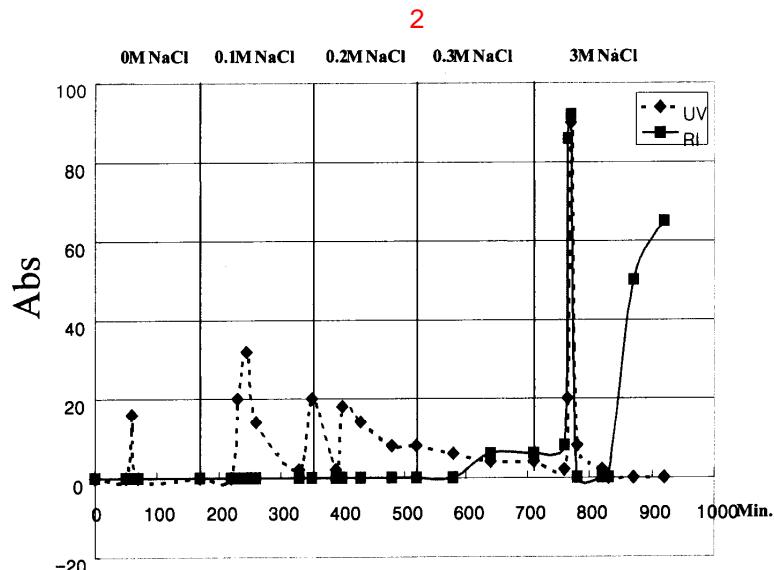
17.

16

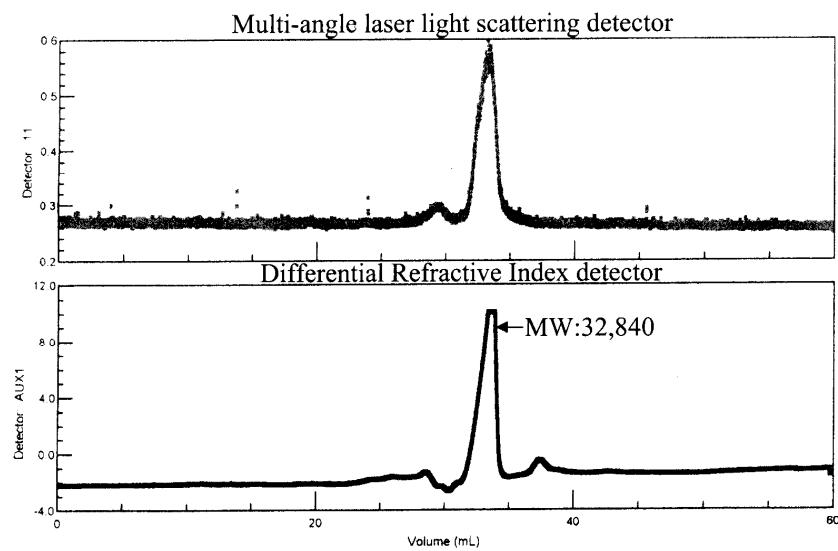
,

1

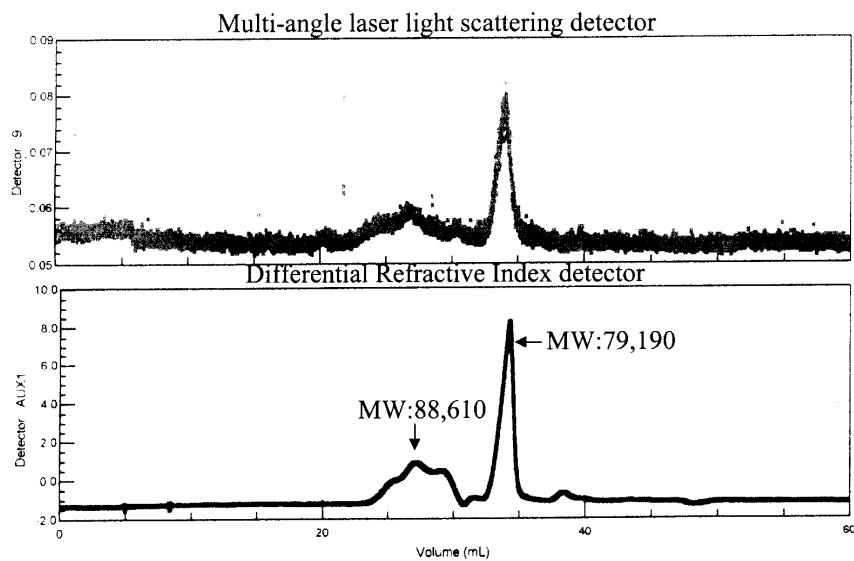




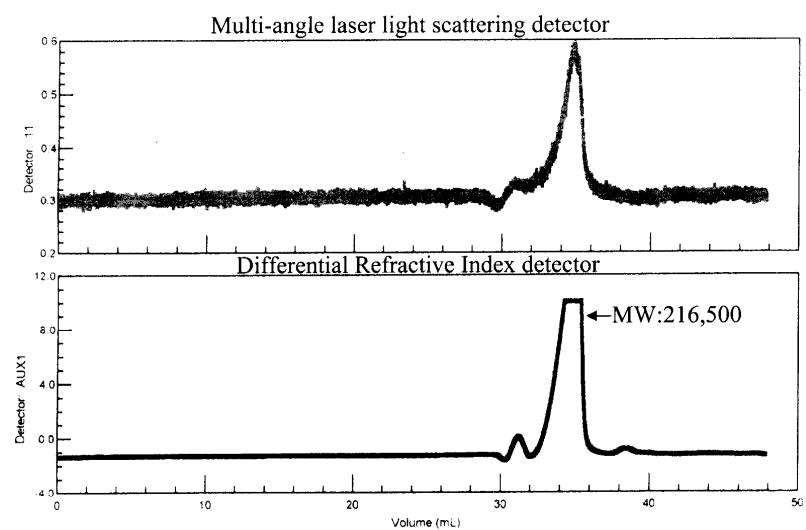
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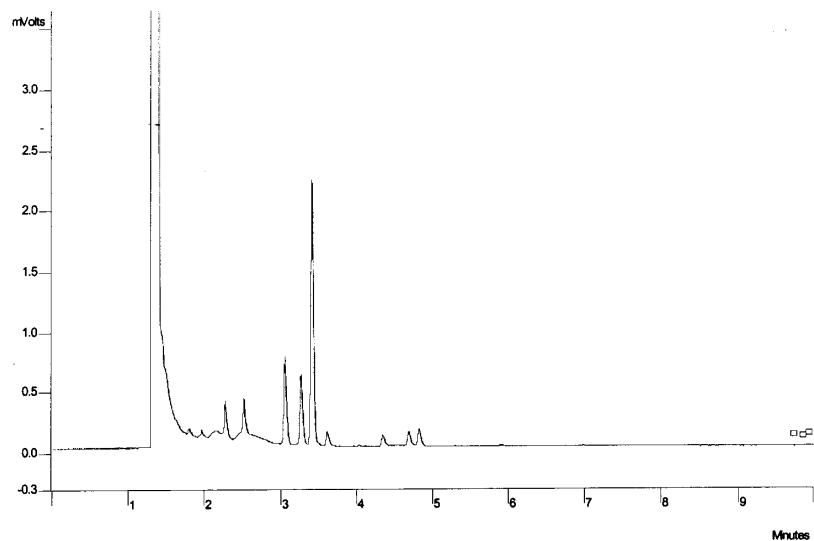
6



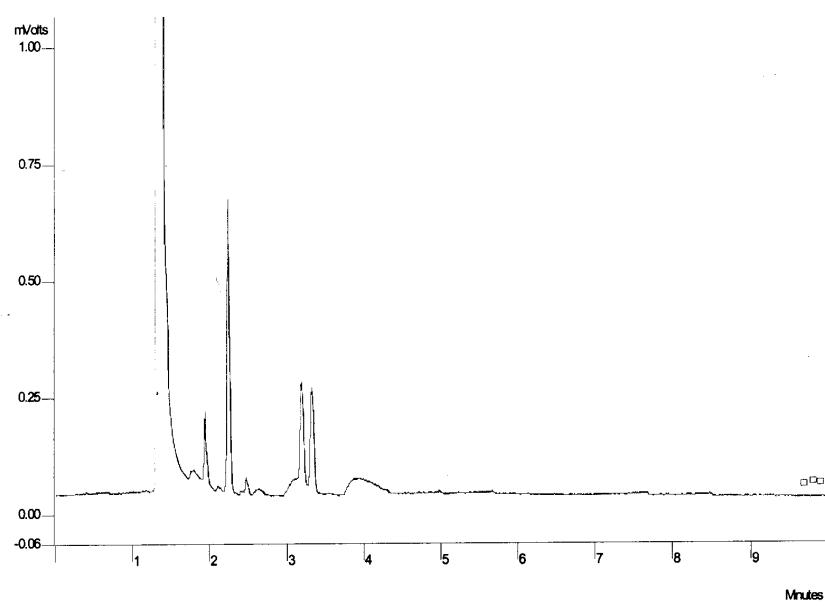
7



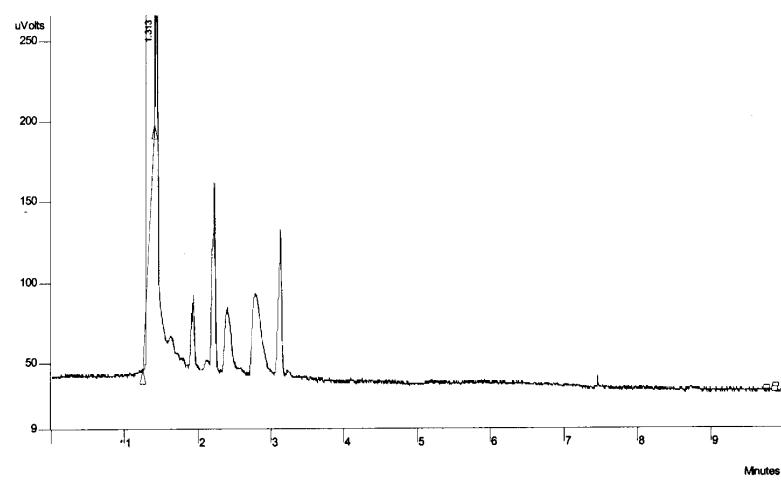
8



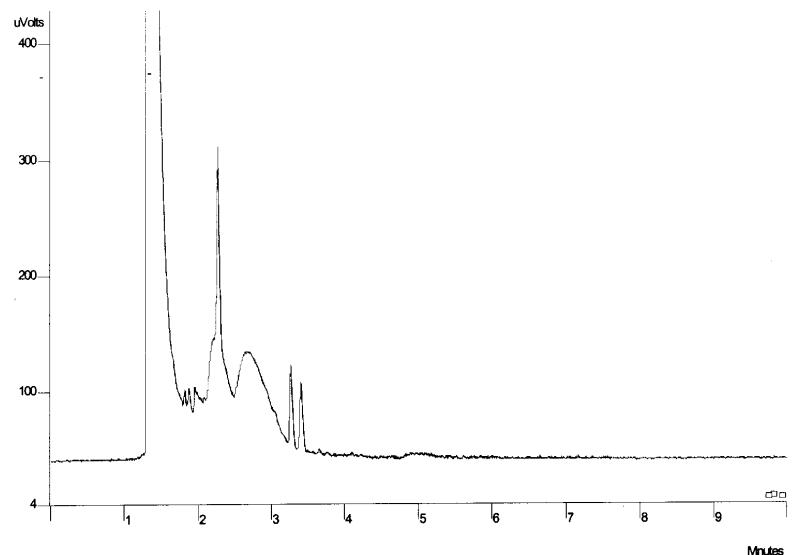
9



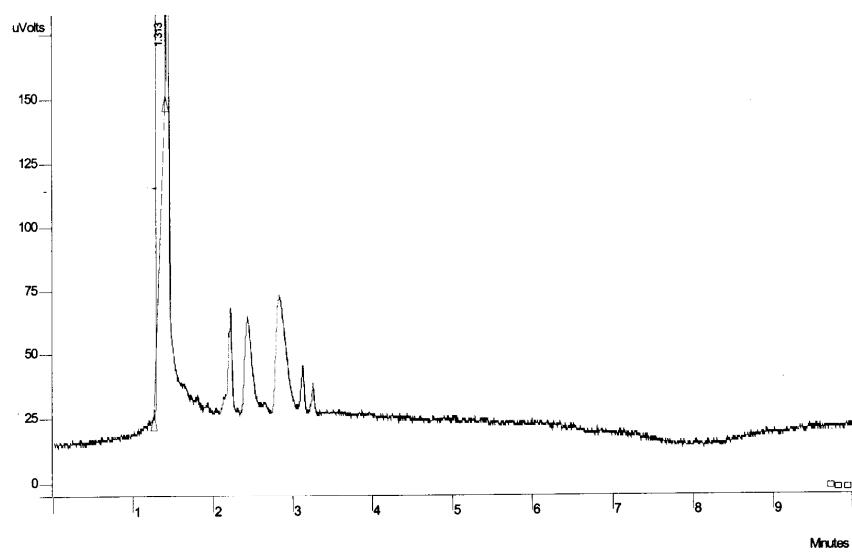
10



11



12



13

