

(19) (KR)
(12) (B1)

(51) 。 Int. Cl. ⁷ A61K 35/78	(45) (11) (24)	2003 11 05 10-0403720 2003 10 23
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(21)	10-2002-0002770	(65)	2003-0062529
(22)	2002 01 17	(43)	2003 07 28

(73)	()	44-3
		44-3
(72)		A124-801
	151	107-1102

(74)

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(54)	가	,
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(*Hovenia dulcis* Thunb.) 가

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,

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

3

40

가

5

-10

가

가

가

가

, D- , LPS, (CCI₄) (Recknagel) (Pharmacol. 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- LPS(Lipopolysaccharide) [(Wendel A.) (Methods Enzymol. 186, 675-680 1990)]. (TNF-) (O₂) . D- LPS , B [(Tiegs G. et al) (1989. Biochem. pharmacol., 38. 627-631 1989)]. (Toranzo et al) (*Toxicology and Applied pharmacology* 40 , p415-425 1977) , BB-3,4- 가 , (脂肪酸) 가 , 10-35% , 8-20% (ADH) (ALDH) , [(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)]. C-C 가 가 , ALDH , [(Tipton, K. F. et al) (Cellular and intracellular distribution of aldehyde 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 가 (aspartate transaminase;GOT), 가 (alanine transaminase;GPT)가 가 (Cho, T.S. *et al* : *Yakhak Hoeji* , 39 , p548, 1995; Gay, R.J. et al: *Clin. Chem.* , 14 , p740, 1968) 50% 30%가 , FDA 120 10 가 (Yoshikawa et al.) (*Chem. Pharm. Bull.* 43(3) : 532 - 534. 1995) 가 (Hase et al) (*Chem. Pharm. Bull.* 20(4) 381-385 1997) 가 D- / 가 (Yoshikawa et al) (*Chem. Pharm. Bull.* 41(10) : 1722 - 1725; 1993 Phytochemistry. 34(5) : 1431 - 1433.)

가 .

가 가

(*Hovenia dulcis* Thunb) 50-800m

Hovenia dulcis Thunb(;

Hovenia dulcis var. *latifolia* Nakai.(; *Hovenia d*

ulcis), *Hovenia dulcis* var. *koreana* Nakai(;) , *Hovenia d*

ulcis 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

(*Hovenia dulcis* Thunb.) 가 , 1 가

(*Hovenia dulcis* var. *latifolia* Nakai.), (*Hovenia dulcis* var. *tomen*

tella Makino, *Hovenia dulcis* var. *latifolia* Nakai)

가 , 가

(1) 가 가 1 (2)

1 2

1 가 가 1 5 , 3 , 가 ,

1 3 , 1.5 100 150 , 100 120

15 , 48 , 30 12 , ,

2 가 가 100% , 30

3 , 1 , 3 4 , , 2

8 , 4 가 , 가 ,

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

[illegible]

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

, Dawn DSP-F, Wyatt Technology)) 0.02% 0.15 M
 NaNO_3 0.5ml/ GPC
 2 :
 (LDH) () 340-UV ^3H - (5 $\mu\text{Ci}/\text{plate}$) RNA
 ^3H - (15 $\mu\text{Ci}/\text{plate}$) ()
 FID (Flame Ionization Detector) HP 5890 가 (-)
 가 (Gas chromatography head space)
 1 : 가
 120 3 (1.5) 가 2 가 1kg 5
 (Whatman No. 2,) (HD5-A 190 ,)
 M24L ,) 가 (12.2g) . SFDS
 2 : 가
 (1) 1 12.2g HPLC 3 1 3
 (UNION 5KR ,) 10 20 (4,000rpm) 가
 0.63g 11.57g (1).
 (2) 2 3 1 3
 1 12.2g HPLC 가
 (Whatman No.2,)
 (100M ℓ) 가 4 (SFDSM24L,)
 (11.50g)
 (3) (1) (2) 가
 30 1g 100ml
 AE-650C 160 M ℓ 254nm UV (Toyo pearl^R, (Tosoh) ,) DE
 ,)가 (RI : RI-10 , EYELA
 (35cm , 2.5cm , Glass Econo- (Biologic LP, BIO-RAD
 500M ℓ ,)
 650C 가 0M, 0.1M, 0.2M, 0.3M, 3M 100ml DEAE -
 가 2ml/ 0M, 0.1M, 0.2M, 0.3M, 3M 500M ℓ
 1, UV 3, 4 5 , RI 0.3M
 2
 0 1,200 2,00
 ft (32mm, 100ml/
 SFDSM24L,) 4 3 , ()
 3:
 2 (3)

on chromatography) MALLS 1 HPSEC(High performance size-exclusi
 1 가 68,040, 36,440 , 2 7 ,
 22,500, 233,300, 200,700 , 3 가 4
 88,610, 79,190 5 32,840 , 216,500

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

akomori, S, *J. Biochem. Tokyo*, 55, p205-209. 1964) [Waeghe, T. J et al., *Carbohydr. Res.*, 123, p281-304. 1983)] (500 μ g) THF LiB(C₂H₅)₃D₁₈ 1.0M TF

A 121 2 가 NaBD₄ GLC GC-EIMS FID(Flame ionization detector) GC CP-3800 가 (Va

rian Co.) [: FID, : 0.25mm ID Fused Silica Capillary GC Column(30cm \times 0.25mm \times 0.2 μ m), Supelco SP-2380., : 230 , : 250 , : 250 , : (1.0ml/min)).

1 2 8 12 1 2 3 4 5

[2]

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

1 2 3 4 5 가 1: 가

68,040, 36,440
22,500, 233,300, 200,7
32,840
88,610, 79,190
216,500

(Dynamic Liver slice culture)

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

(1)

BALB/c

21-24

(SD)

40-80%

(Purina Korea)

12

(2)

가

/ (Brendel/Vitron)

0.8 mm, 200 μ m (18 - 22 mg)

) 가

O₂ / (suCO₂ (95%/5%)

(dynamic organ culture incubator)

rface culture)

가

(4mM),

(1mM),

(500 μ M)

5

O₂ / CO₂ (95%/5%)

LDH (

)

가

(3)

(LDH)

가
LDH UV (340-UV)
가
(LDH)
(LDH)
가
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)
³ H- (5 μ Ci/ , 0.38mM) 가 2
20% (TCA) 가 2,000 \times g 10 10% TCA 2 1N 가
(digestion)
가
가
가
가
가
가
가
가
가
(5)
40% (w/v) 10 ml/kg가 , 가
1 4
(Sigma 332, UV, Endpoint method,)
40% 1 가 19 1/2가 4
가 40%
(0.3mM) 1 0.3ml(500mg/ml) 4
0 0.154M KCl 0.1M , 1
4 9,000 x g 30 (pH 7.4) , - 110,000 x g 1
NAD 55mM
(pH 7.4), 20mM , 0.2mM NAD 2-3mg 가
340nm 3
, 20 가
가
가
[]
[]
2 2g
1g
[]
2 100mg
100mg
100mg

2mg

[2] 100mg

100mg

100mg

2mg

[2] 100mg

pH

2ml

pH 7.5

[]

60

60

60

[: 30 %, 15 %, 20 %, 0.5 %, 0.5 %]

: 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%

가 0.5~0.82% , 85~98 20~180 1 : 4

(0.5%), (2%), (2%), (0.5%), (75%)

가

(57)

1.

2.

3.

(*Hovenia dulcis* Thunb.) 1 4 가 가 ,

20,000 D

4.

3 ,

O M

68,040 D, 36,440 D

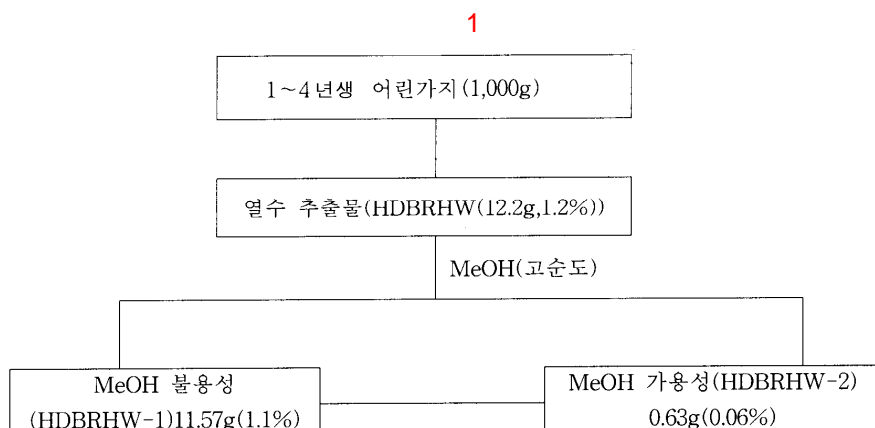
5.

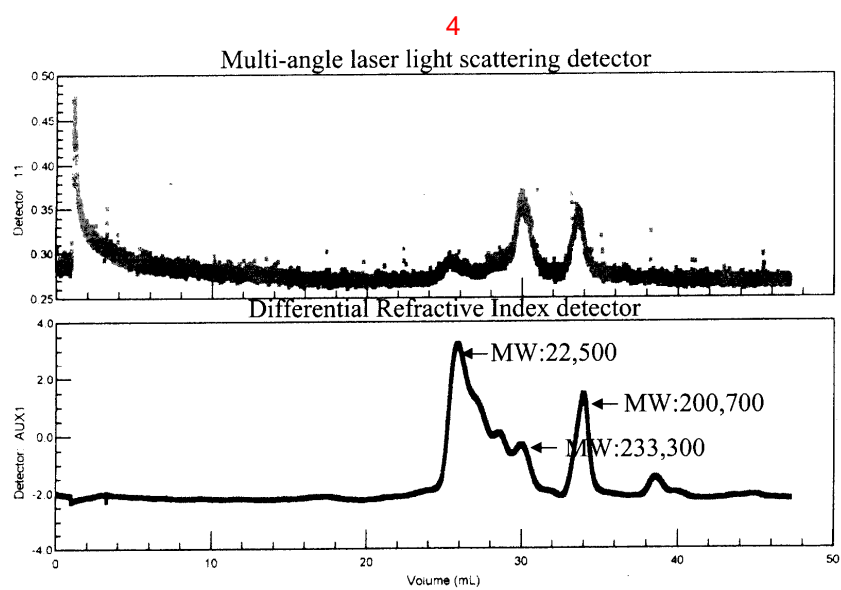
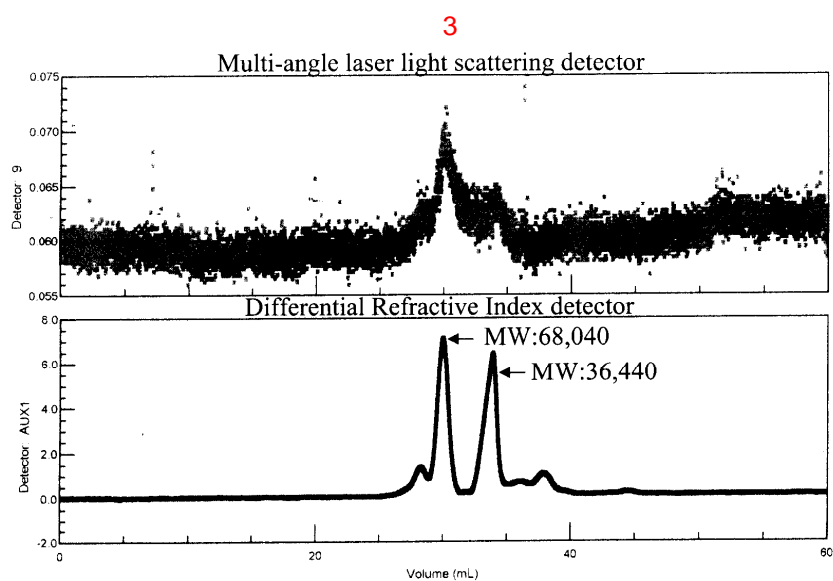
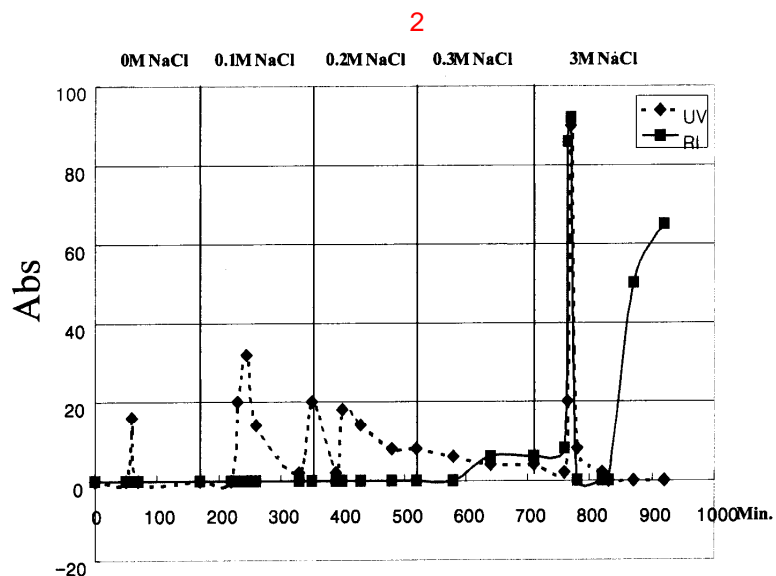
3 ,

0.1 M

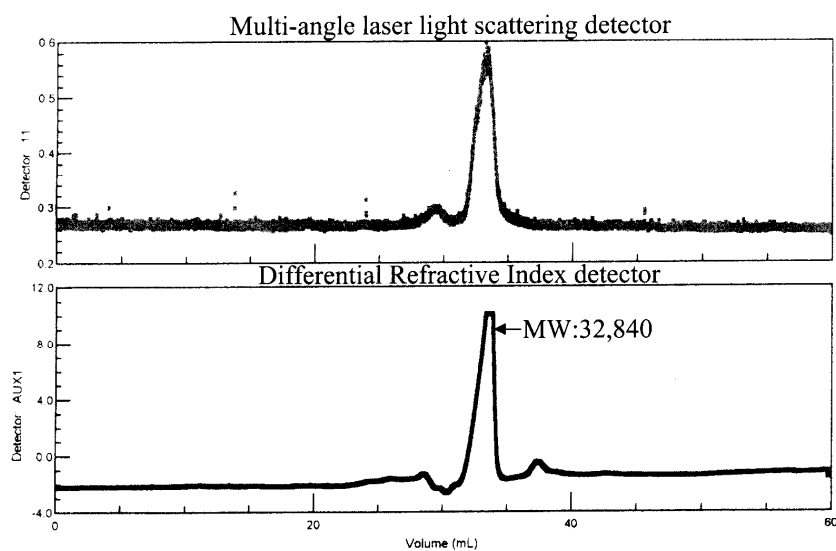
22,500 D, 233,300 D, 200,700 D

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 , 3
11. 8 .
12. 10 , DEAE .
- 13.
14. 3 8 , ,
15. 14 , ,
16. 3 8 가 ,
17. 16 ,

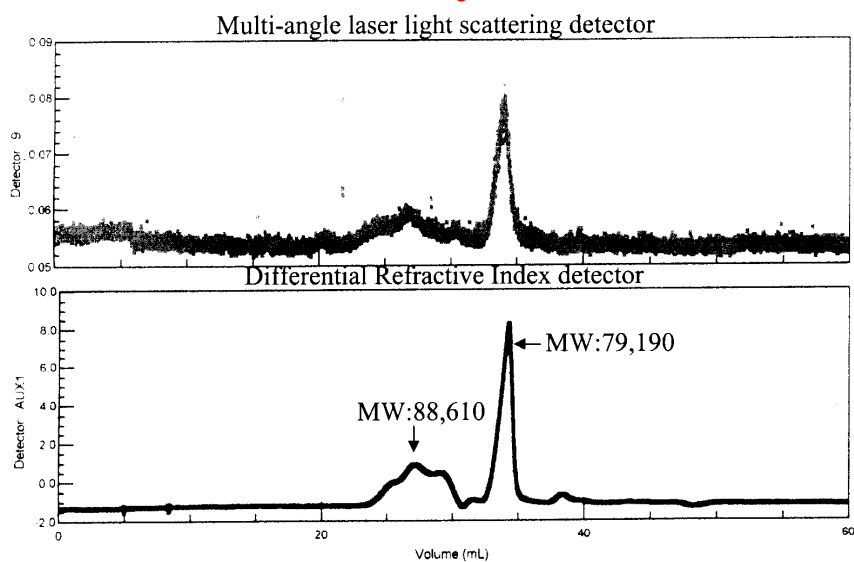




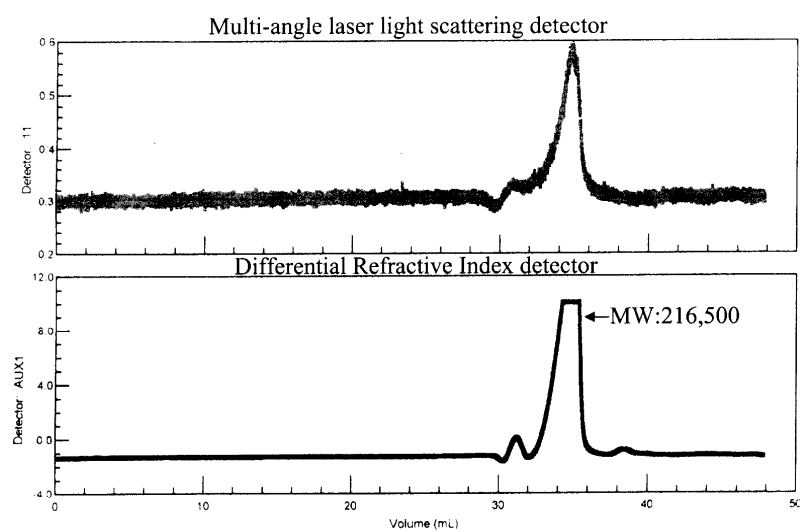
5



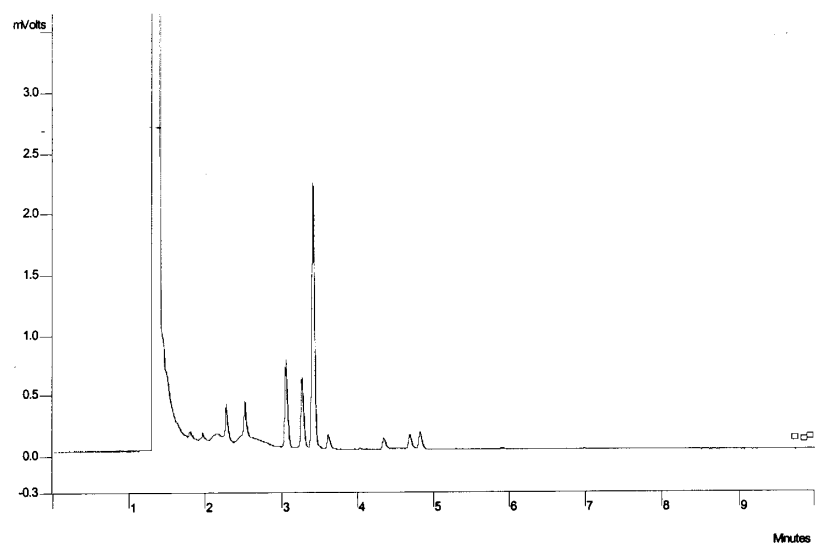
6



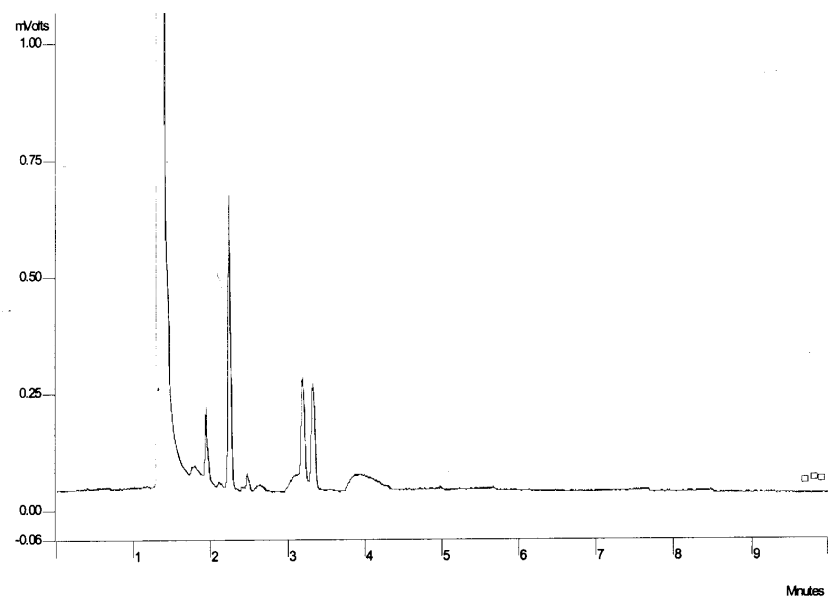
7



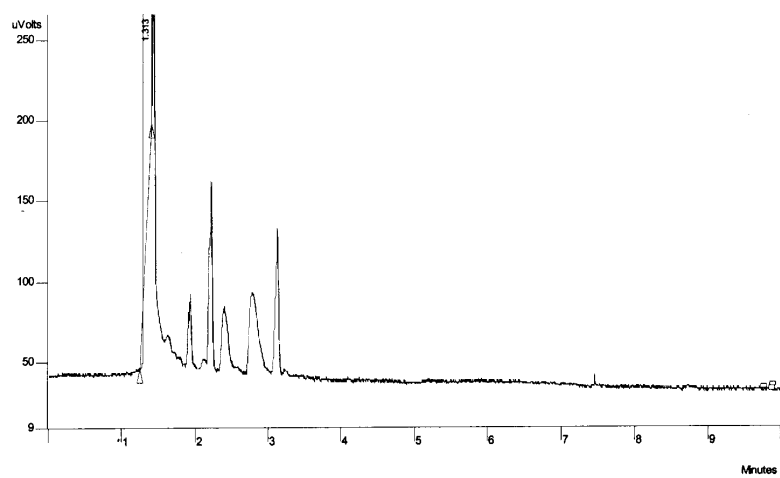
8



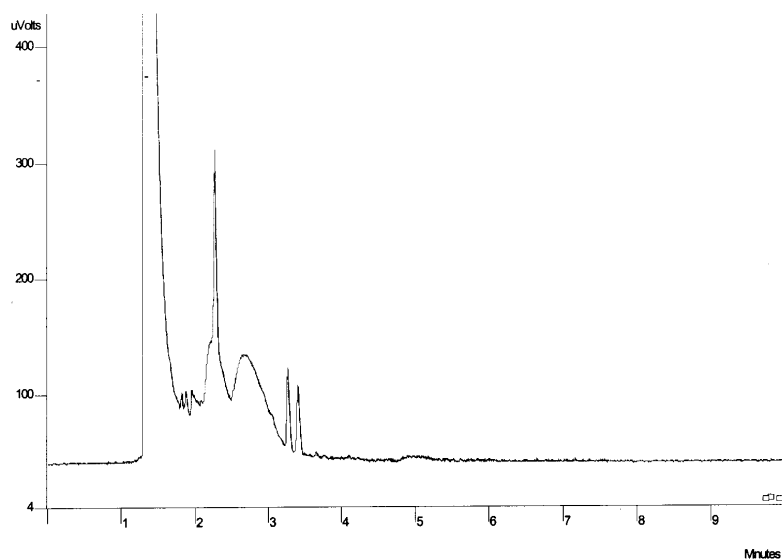
9



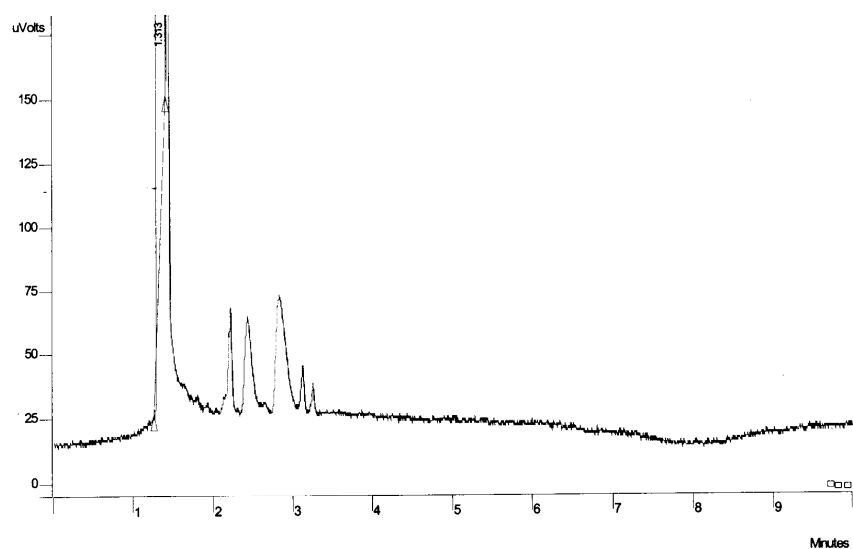
10



11



12



13

