APPENDIX

Media, Reagents and buffers preparation

For Yeast culture

Synthetic dextrose minimal (SD) media

6.7 g Yeast nitrogen base without amino acids

20 g/L Glucose

Adjust the final volume to 1 L distilled H_2O. Autoclave at 110 ^{o} C for 10 min.

For β-galactosidase Filter Assays

Z buffer

16.1 g/L	$Na_2HPO_4 \cdot 7H_2O$ (0.06 M)
5.50 g/L	$NaH_2PO_4 \cdot H_2O$ (0.04M)
0.75 g/L	KCl (0.01M)
0.246 g/L	$MgSO_4 \cdot 7H_2O$ (0.001M)
2.7 mL	β-mercaptoethanol (BME) (0.05M)

Bring to approximately 1 L with H_2O, dissolve all the salts. Adjust to pH 7.0 and autoclave. Can be stored at room temperature for up to 1 year

ONPG

O - nitrophenyl β – D - galactopyranoside **(**Sigma Cat No. N-1127**)** 4 mg/ml in Z buffer. Adjust to pH 7.0 and mix well.

Notes: ONPG requires 1–2 hr to dissolve. Prepare solution fresh before each use

For human fetal osteoblast culture

DMEM medium

13.4 g DMEM

4.8 g HEPES

3.7 g $NaHCO_3$

10 ml Penicillin/Streptomycin

1ml Gentamycin

All chemicals were dissolved in 800 ml of deionized distilled water, adjusted pH to 7.2 and made up to volume 1,000 ml. The media was sterile by suction through a filter (membrane pore size 0.2 μm) and stored at 4^oC.

DMEM/F12 (1:1) medium

1X Nutrient mixture F – 12 (Ham)

15mM HEPES

L- Glutamine

10 ml Penicillin/Streptomycin

1 ml Gentamycin

50 ml fetal bovine serum

And made up to volume 500 ml. The media was sterile by suction through a filter (membrane pore size 0.2 μm) and stored at -20^oC.

Phosphate buffer saline (PBS)

8 g NaCl

0.20 g KCl

1.44 g Na_2HPO_4

0.24 g $NaH_2PO_4.2H_2O$

All Chemicals were dissolved in 900 ml of distilled water, adjusted to pH 7.4 and then added with distilled water to adjust to the volume 1,000 ml and stored at room temperature.

0.05% Trypsin-EDTA

10 ml 0.5% Trypsin-EDTA

90 ml PBS pH 7.4

Alizarin red-s solution

2 mg Alizarin red-S

80 ml Deionized water

Adjusted with 0.5 % ammonia hydrochoxide acid, pH 4.2 (Freshly preparation) and then added with distilled water to adjust to the volume 100 ml and stored at room temperature.

Total ion chromatograms of the extraction of *V. siamensis* obtained by Gas Chromatography-mass Spectrometry Analysis

```
File       : D:\1SAMPLE\V1_3.D
Operator   :
Acquired   : 19 Jun 2012  10:20     using AcqMethod VANILLA
Instrument :  Instrumen
Sample Name: sample V1
Misc Info  :
Vial Number: 1
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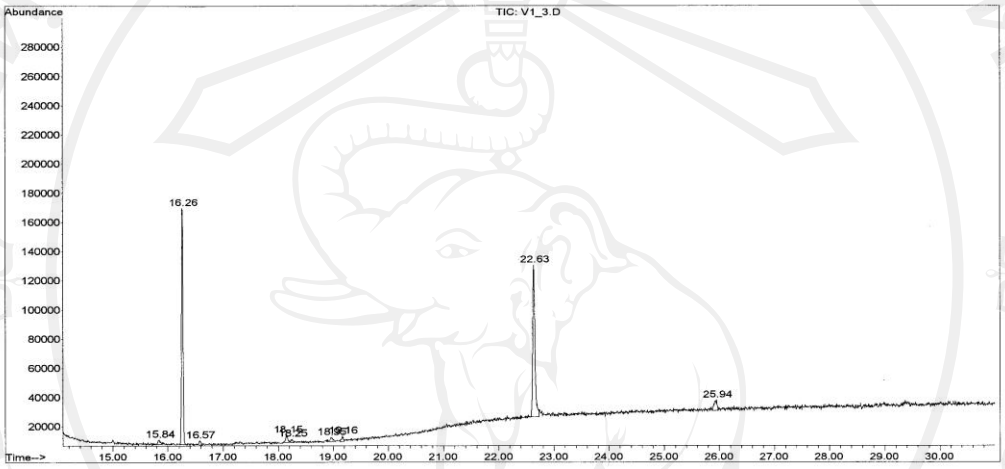

Area Percent Report

```
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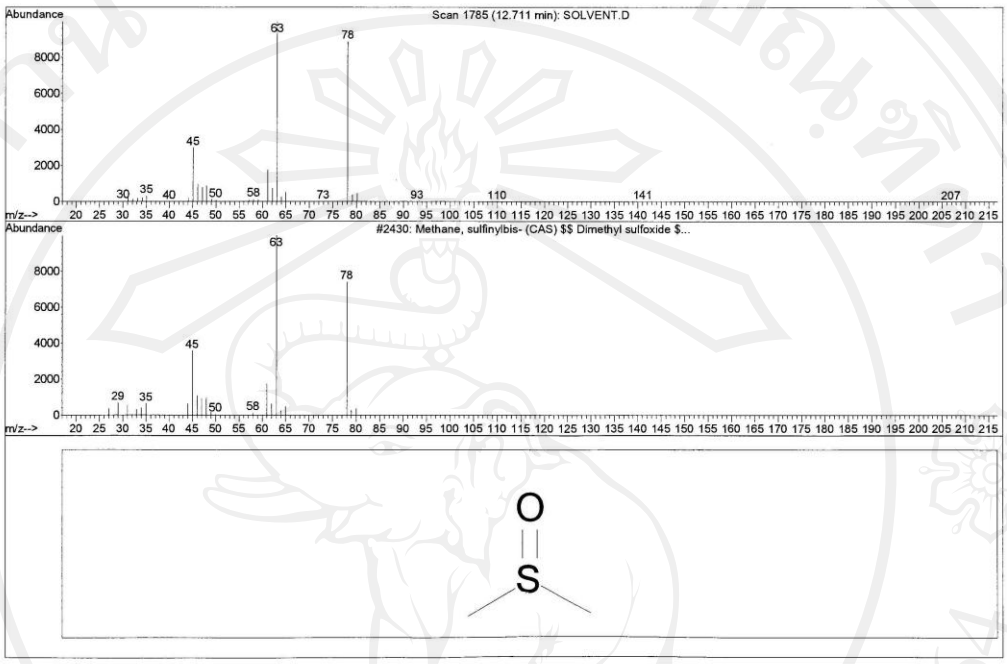
Acq On    : 19 Jun 2012  10:20                      Operator:
Sample    : sample V1                               Inst    : Instrumen
Misc      :                                         Multiplr: 1.00
                                                 Sample Amount: 0.00

Signal    : TIC
```

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	14.992	164	169	174	rM 4	2321	3754	1.24%	0.567%
2	15.839	320	326	336	rM 5	2916	8348	2.75%	1.260%
3	16.260	397	404	417	rM	161932	303721	100.00%	45.856%
4	16.573	456	462	468	rM 6	3026	6709	2.21%	1.013%
5	18.153	747	755	763	rM 6	5111	11729	3.86%	1.771%
6	18.245	767	772	776	rM 8	2267	3770	1.24%	0.569%
7	18.952	899	903	911	rM 6	2780	7268	2.39%	1.097%
8	19.162	938	942	948	rM 7	3458	5663	1.86%	0.855%
9	22.632	1576	1585	1610	rM	103662	287453	94.64%	43.400%
10	25.945	2186	2199	2204	rM	6907	23920	7.88%	3.611%

Sum of corrected areas: 662335

Library Searched : C:\Database\wiley7n.l
Quality : 96
ID : Methane, sulfinylbis- (CAS) $$ Dimethyl sulfoxide $$ DMSO $$ DMS 70 $$ DMS 90 $ $ (DMSO) $$ SQ 9453 $$ Dimethyl sulphoxide $$ Hyadur $$ Dolicur $$ Dromisol $$ Durasorb $$ Dimexide $$ Somipront $$ Demsodrox $$ Infiltrina $$ Methyl sulfoxid e $$ SQ 9453 roxye



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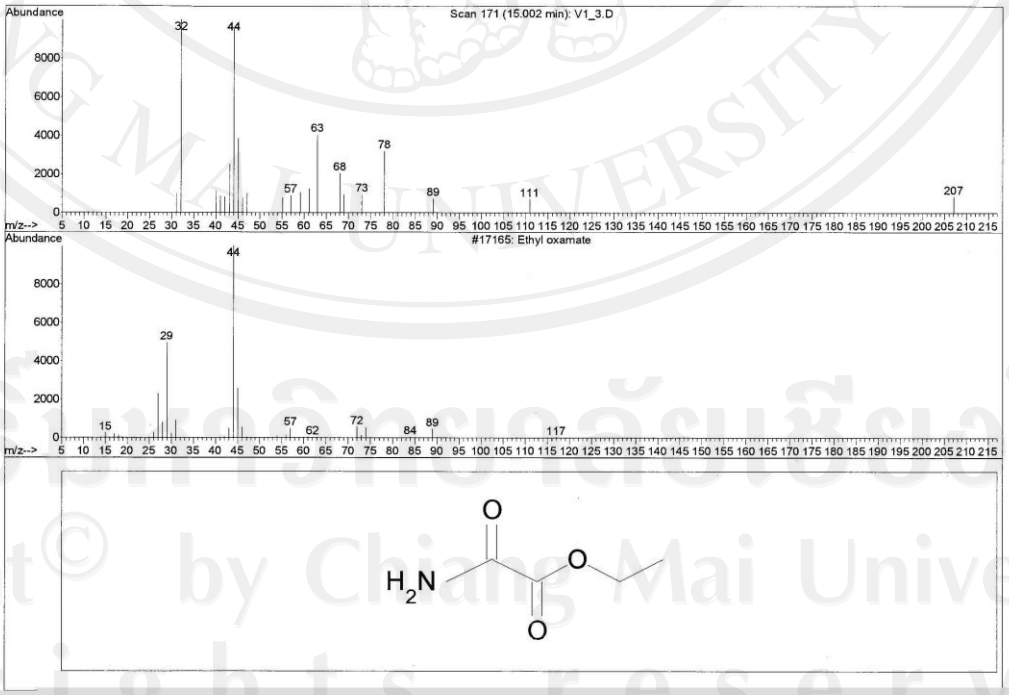
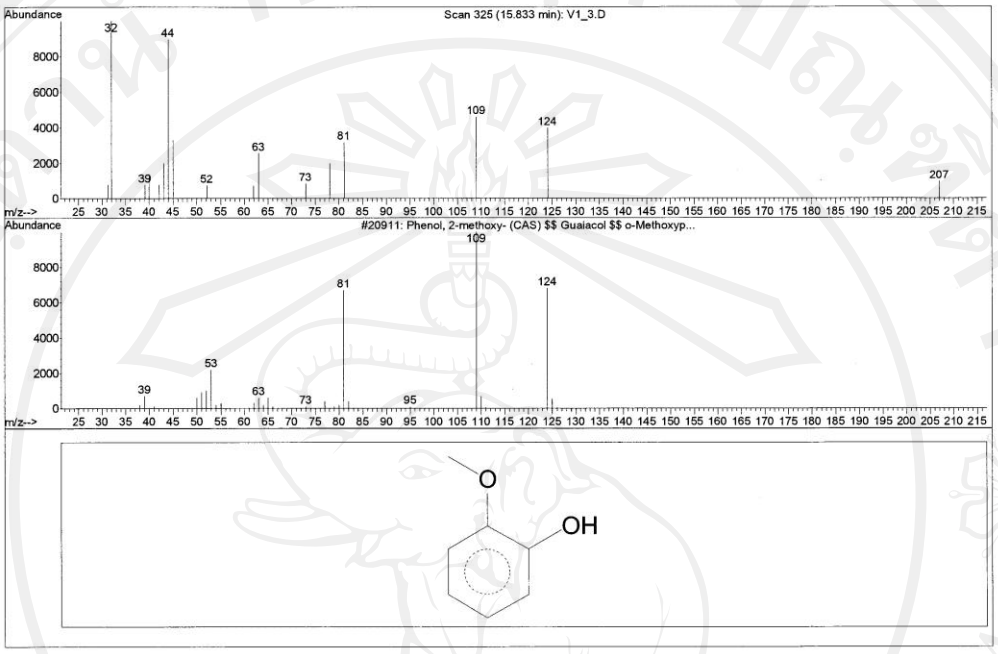


Library Searched : C:\Database\wiley7n.l
Quality : 12
ID : Phenol, 2-methoxy- (CAS) $$ Guaiacol $$ o-Methoxyphenol $$ Guajol $$ Guasol $$ Anastil $$ Guaiastil $$ Guaicolina $$ o-Guaiacol $$ Pyroguaiac acid $$ o-Hydroxyanisole $$ 2-Hydroxyanisole $$ O-Methyl catechol $$ Phenol, o-methoxy- $$ 2-Methoxyphenol pionit



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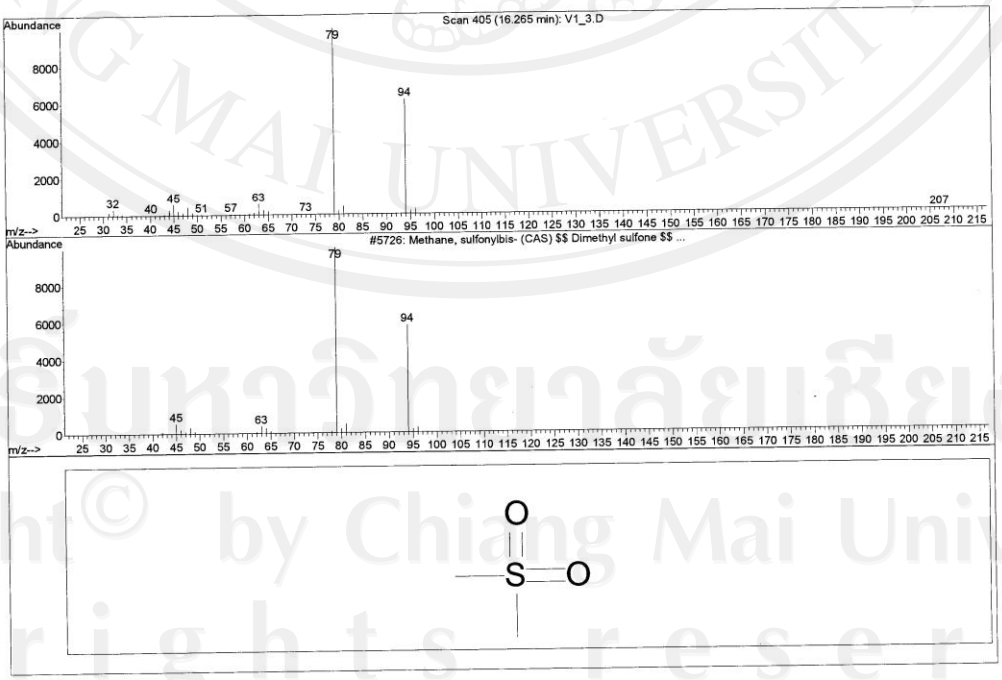

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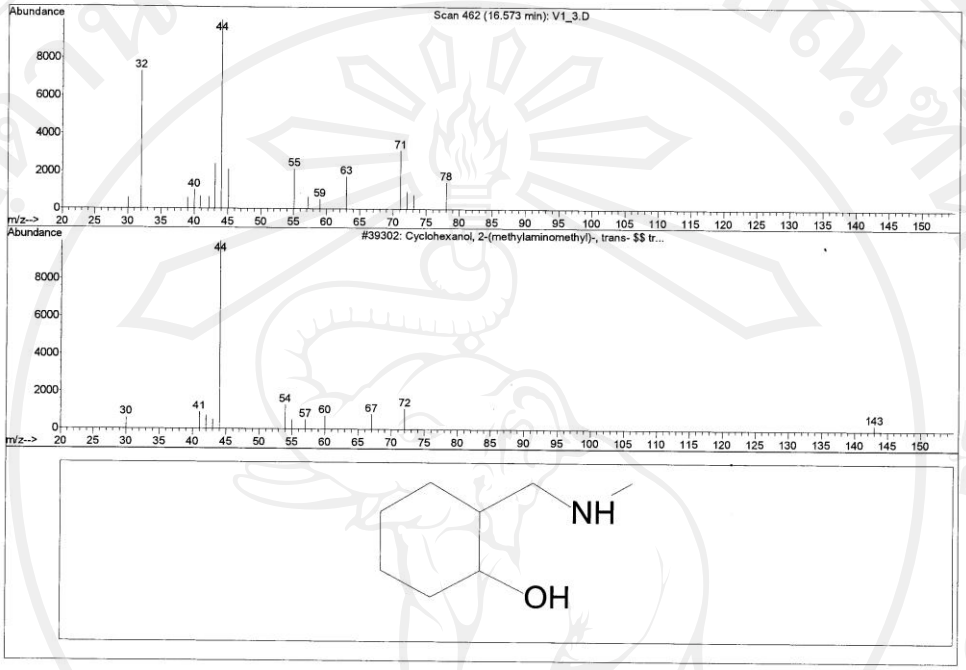

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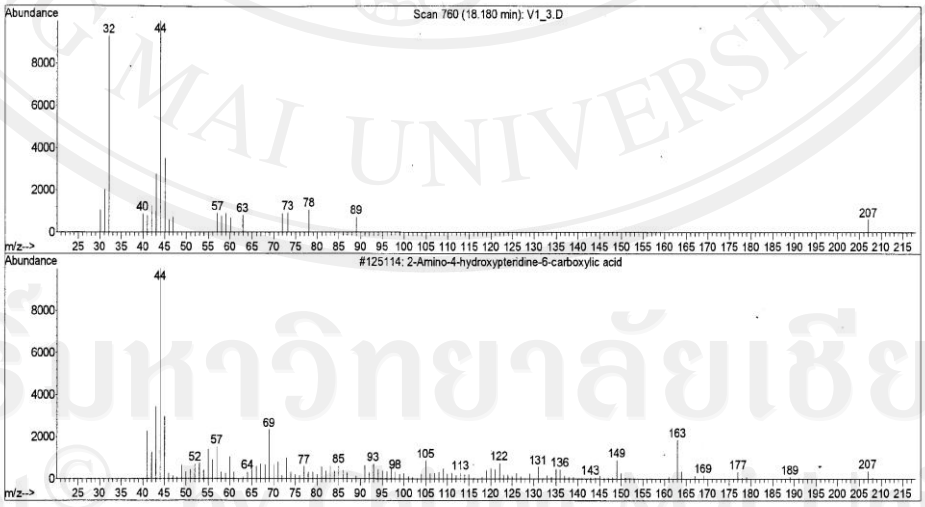

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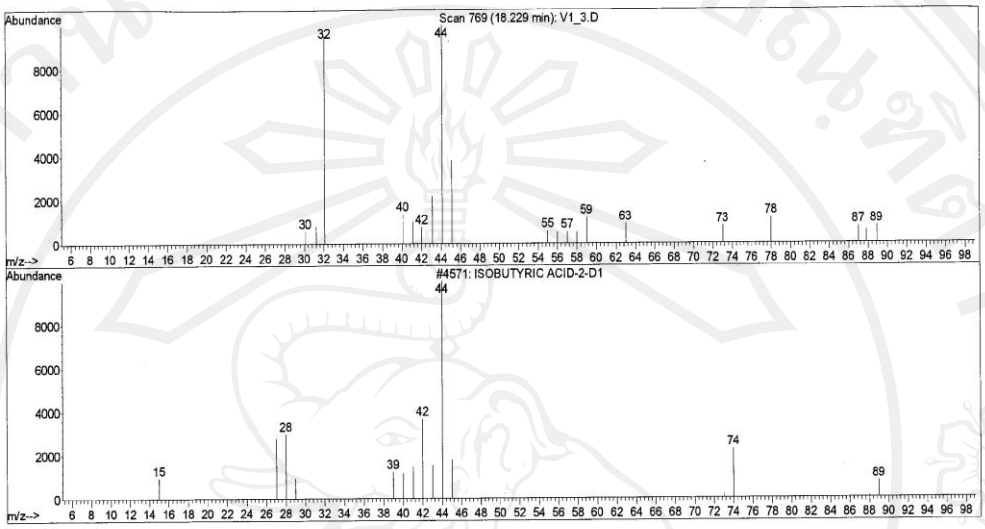

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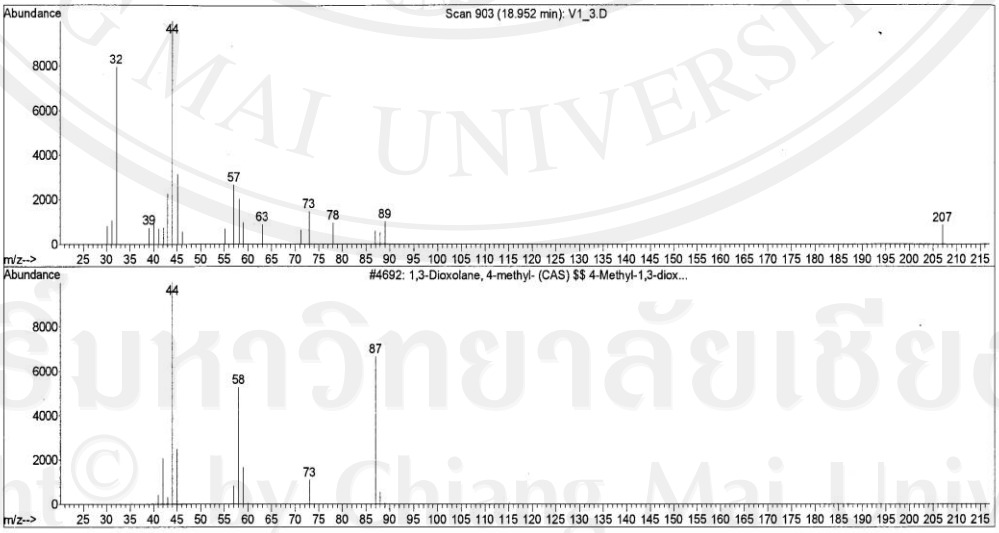
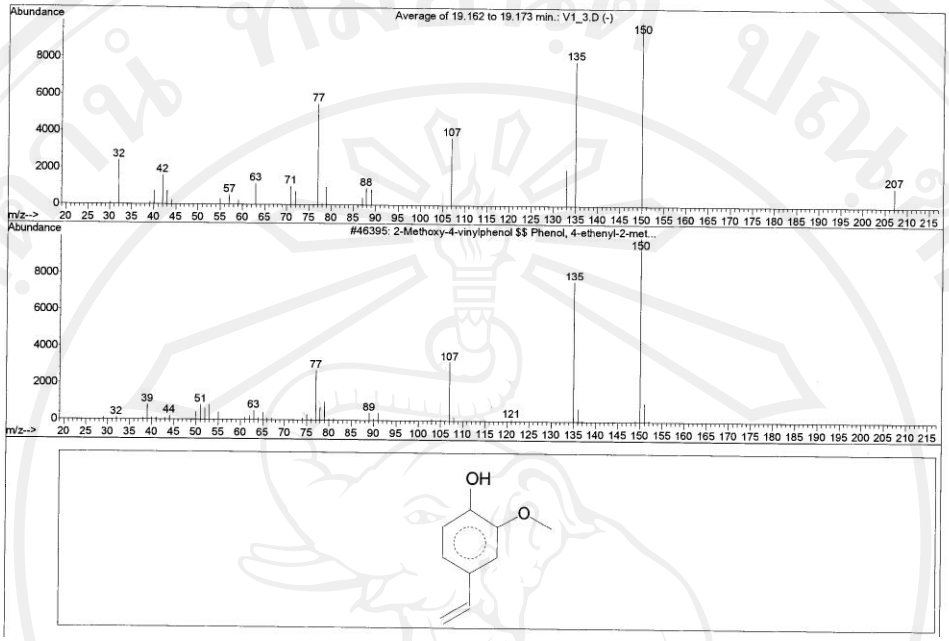
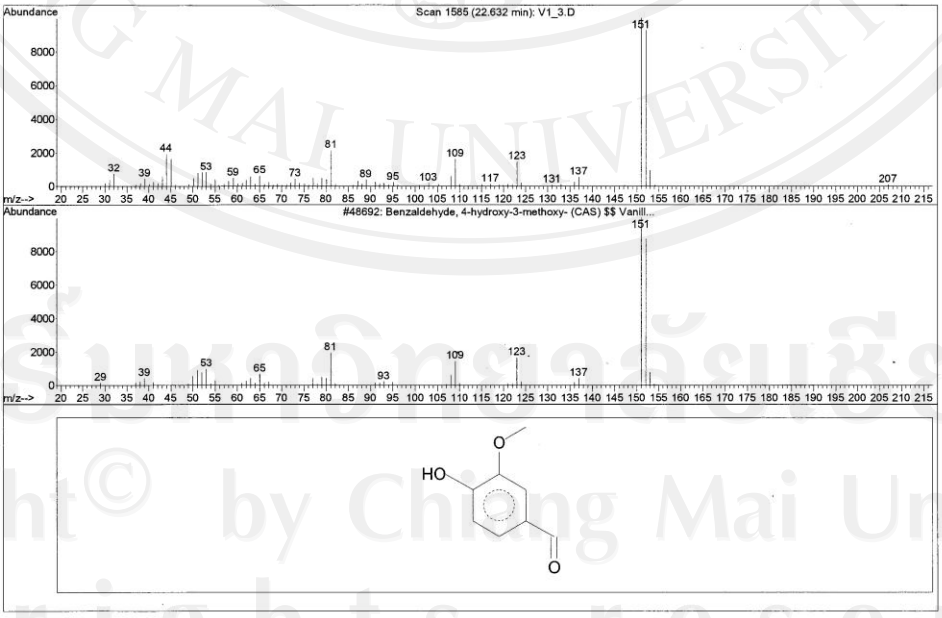


Library Searched : C:\Database\wiley7n.l
Quality : 59
ID : 2-Methoxy-4-vinylphenol $$ Phenol, 4-ethenyl-2-methoxy- $$ Phenol, 2-methoxy-4-vinyl- $$ 4-Hydroxy-3-methoxystyrene $$ p-Vinylguaiacol $$ 4-Vinylguaiacol



Library Searched : C:\Database\wiley7n.l
Quality : 96
ID : Benzaldehyde, 4-hydroxy-3-methoxy- (CAS) $$ Vanillin $$ VANILLINE $$ Lioxin $$ Vanilin $$ Vanillaldehyde $$ Vanillic aldehyde $$ 2-Methoxy-4-formylphenol $$ 4-Formyl-2-methoxyphenol $$ p-Hydroxy-m-methoxybenzaldehyde $$ 3-Methoxy-4-hydroxybenzaldehyde $$



Library Searched : C:\Database\wiley7n.l
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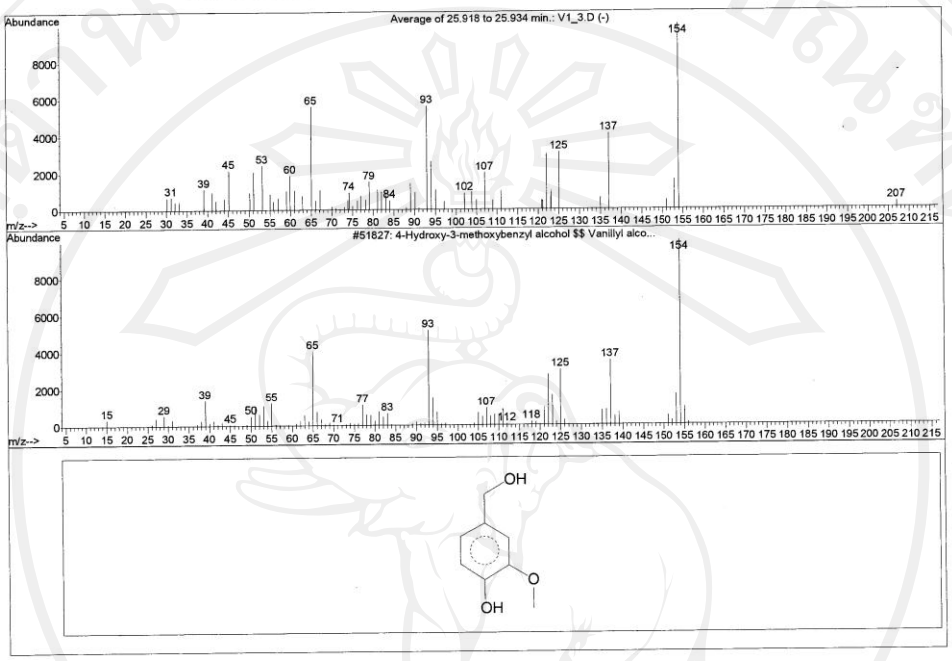
rcxy-3-methoxy-



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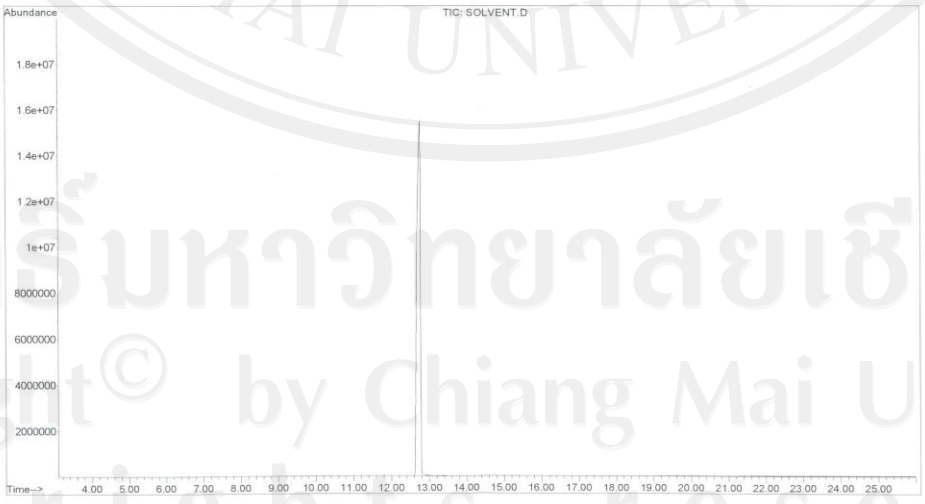
Instrument : Instrumen
Sample Name: solvent
Misc Info :
Vial Number: 1



CURRICULUM VITAE

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Educational Background

- Bachelor of Nursing Science. Nursing. Faculty of Nursing, Chiang Mai University in 1991.
- Specialists in training. Nurse Anesthetists. Faculty of Medicine, Siriraj Hospital, Mahidol University in 1994.
- Master of Science in Biochemistry, Faculty of Medicine, Chiang Mai University in 2002.

Scholarship

The Graduate School, Chiang Mai University