Synthesis of All-Carbon, Quaternary Center-Containing Cyclohexenones through an Organocatalyzed, Multi-Component Coupling

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Electronic Supplementary Information: HPLC Traces
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Synthesis of All-Carbon, Quaternary Center-Containing Cyclohexenones through an Organocatalyzed, Multi-Component Coupling: HPLC Traces

Table of Contents

Please note that racemic mixtures (denoted as mixture on trace page) were generated by mixing of enantiomeric products generated from individual experiments using D- and L-forms of catalyst **25**.

Data File C:\CHEM32\1\DATA\HUA\HUA000096.D
Sample Name: 14-22

```
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 Acq. Operator   : Hua                        Seq. Line :   1
 Acq. Instrument : Instrument 1               Location :  Vial 1
 Injection Date  : 10/5/2009 2:45:56 PM            Inj :    1
                                              Inj Volume : 5 µl
 Acq. Method     : C:\CHEM32\1\METHODS\HG129.M\MSI83.M
 Last changed    : 10/5/2009 1:13:01 PM by Hua
 Analysis Method : C:\CHEM32\1\METHODS\HUA.M
 Last changed    : 3/15/2010 7:17:02 PM by CHAO
                   (modified after loading)
 Method Info     : ADanalytical column, 1.0 mL/min, 254 nm, IPA:HEX10:90
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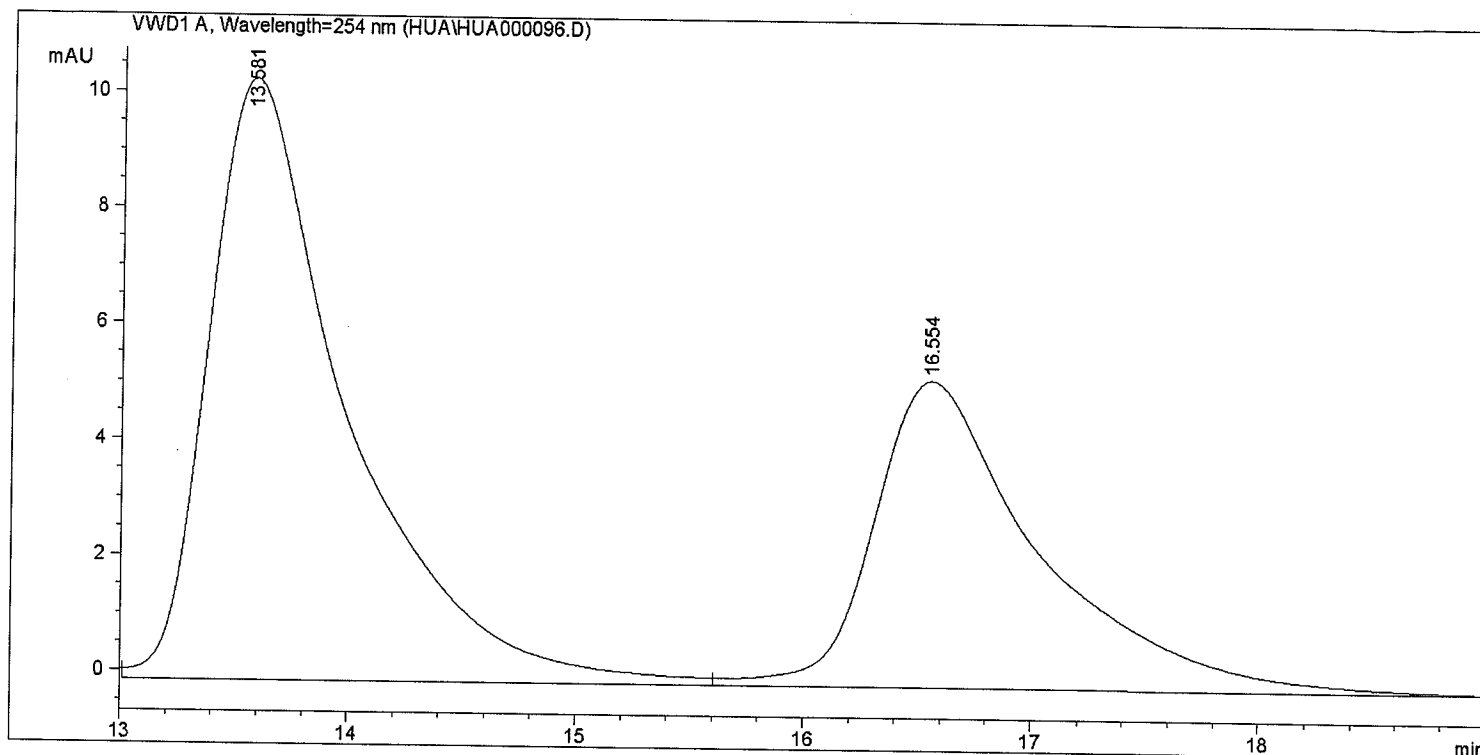

(mixture)

20
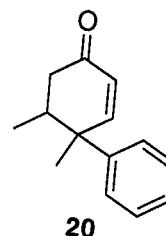

```
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==================================================================
Fraction collection off
==================================================================
No Fractions found.
==================================================================

==================================================================
                        Area Percent Report
==================================================================

Sorted By            :        Signal
Multiplier           :        1.0000
Dilution             :        1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: VWD1 A, Wavelength=254 nm

Peak RetTime Type  Width      Area        Height       Area
  #   [min]        [min]   mAU   *s      [mAU   ]        %
----|-------|----|-------|----------|-----------|--------|
  1  13.581 VV   0.6158  439.66168   10.39433   61.8735
  2  16.554 VBA  0.7351  270.91965    5.30925   38.1265
```

Data File C:\CHEM32\1\DATA\HUA\HUA000089.D
Sample Name: 14-19

```
===========================================================================
Acq. Operator   : Hua                          Seq. Line :   1
Acq. Instrument : Instrument 1                  Location : Vial 1
Injection Date  : 10/4/2009 3:48:51 PM               Inj :   1
                                               Inj Volume : 5 µl
Acq. Method     : C:\CHEM32\1\METHODS\HG129.M\MSI83.M
Last changed    : 10/4/2009 3:24:09 PM by Hua
Analysis Method : C:\CHEM32\1\METHODS\HUA.M
Last changed    : 3/15/2010 7:21:11 PM by CHAO
                  (modified after loading)
Method Info     : ADanalytical column, 1.0 mL/min, 254 nm, IPA:HEX10:90
```

20

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===========================================================================
                        Fraction Information
===========================================================================
Fraction collection off
===========================================================================
No Fractions found.
===========================================================================
===========================================================================
                        Area Percent Report
===========================================================================

Sorted By             :      Signal
Multiplier            :      1.0000
Dilution              :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: VWD1 A, Wavelength=254 nm

Peak RetTime Type  Width     Area       Height      Area
  #   [min]        [min]   mAU   *s    [mAU    ]      %
----|-------|----|-------|----------|-----------|--------|
  1  13.340 VV    0.7263   349.69150    6.81992   94.6124
  2  16.181 MM    0.8680    19.91276 3.82342e-1    5.3876
```
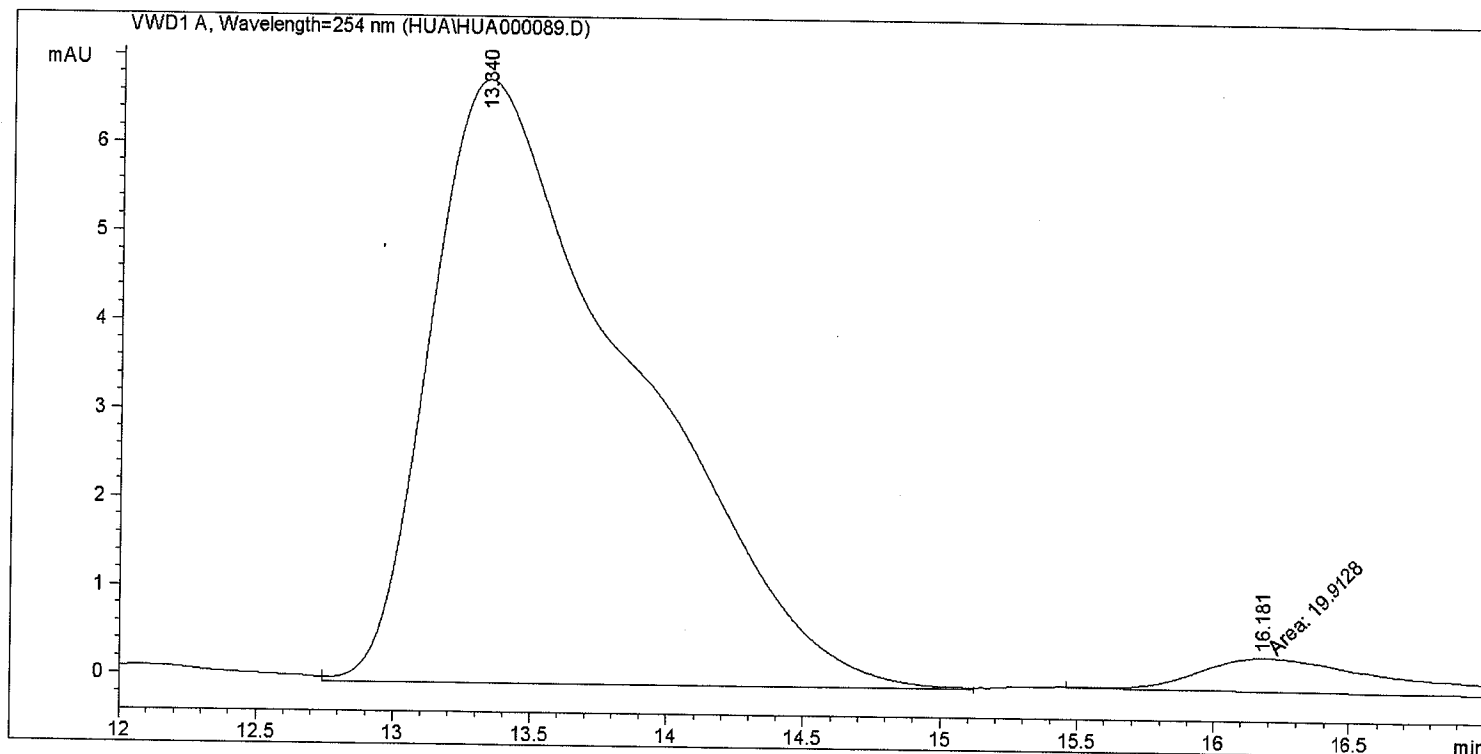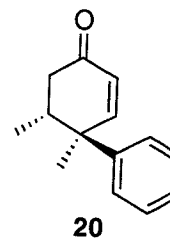
Data File C:\CHEM32\1\DATA\HUA\HUA000180.D
Sample Name: 14-68 mix

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Acq. Instrument : Instrument 1                Location : Vial 1
Injection Date  : 11/9/2009 2:47:15 PM             Inj :   1
                                            Inj Volume : 5 µl
Acq. Method     : C:\CHEM32\1\METHODS\022008CW.M
Last changed    : 11/9/2009 2:45:05 PM by HUA
Analysis Method : C:\CHEM32\1\METHODS\HUA.M
Last changed    : 3/15/2010 7:22:28 PM by CHAO
                  (modified after loading)
Method Info     : ADanalytical column, 1.0 mL/min, 254 nm, IPA:HEX10:90
```
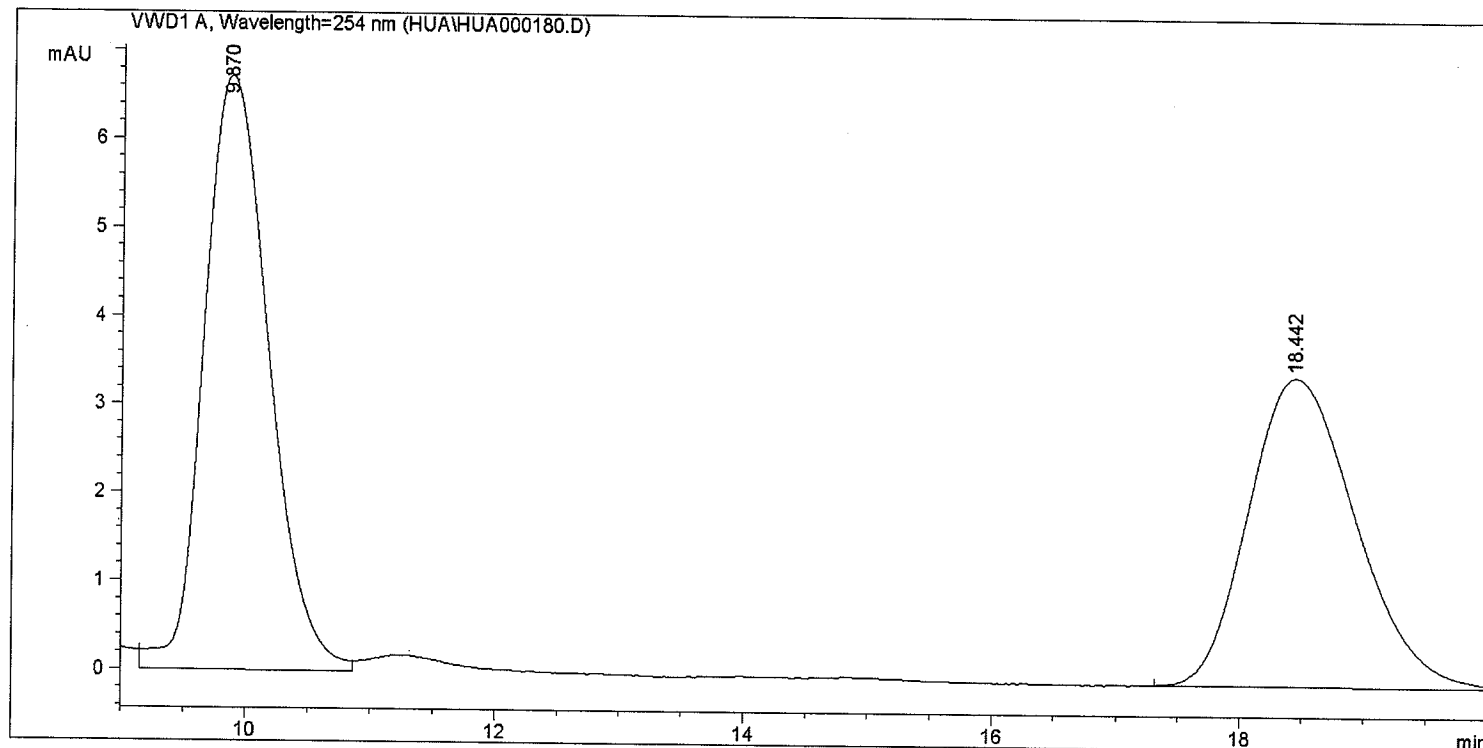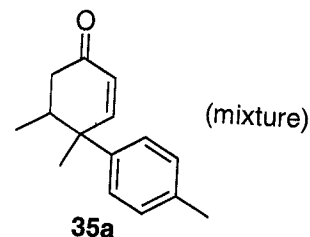
(mixture)

35a

VWD1 A, Wavelength=254 nm (HUA\HUA000180.D)

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==================================================================
                       Fraction Information
==================================================================
Fraction collection off
==================================================================
No Fractions found.
==================================================================
==================================================================
                       Area Percent Report
==================================================================

Sorted By             :       Signal
Multiplier            :       1.0000
Dilution              :       1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: VWD1 A, Wavelength=254 nm

Peak RetTime Type  Width     Area       Height     Area
  #   [min]        [min]   mAU   *s    [mAU   ]      %
----|-------|----|-------|----------|----------|--------|
  1   9.870 VV    0.5708  244.89981    6.71901  53.8869
  2  18.442 BBA   0.9398  209.57021    3.48761  46.1131
```

35a

VWD1 A, Wavelength=254 nm (HUA\HUA000183.D)

==
                      Fraction Information
==
Fraction collection off
==
No Fractions found.
==

==
                      Area Percent Report
==

Sorted By   :   Signal
Multiplier   :   1.0000
Dilution   :   1.0000
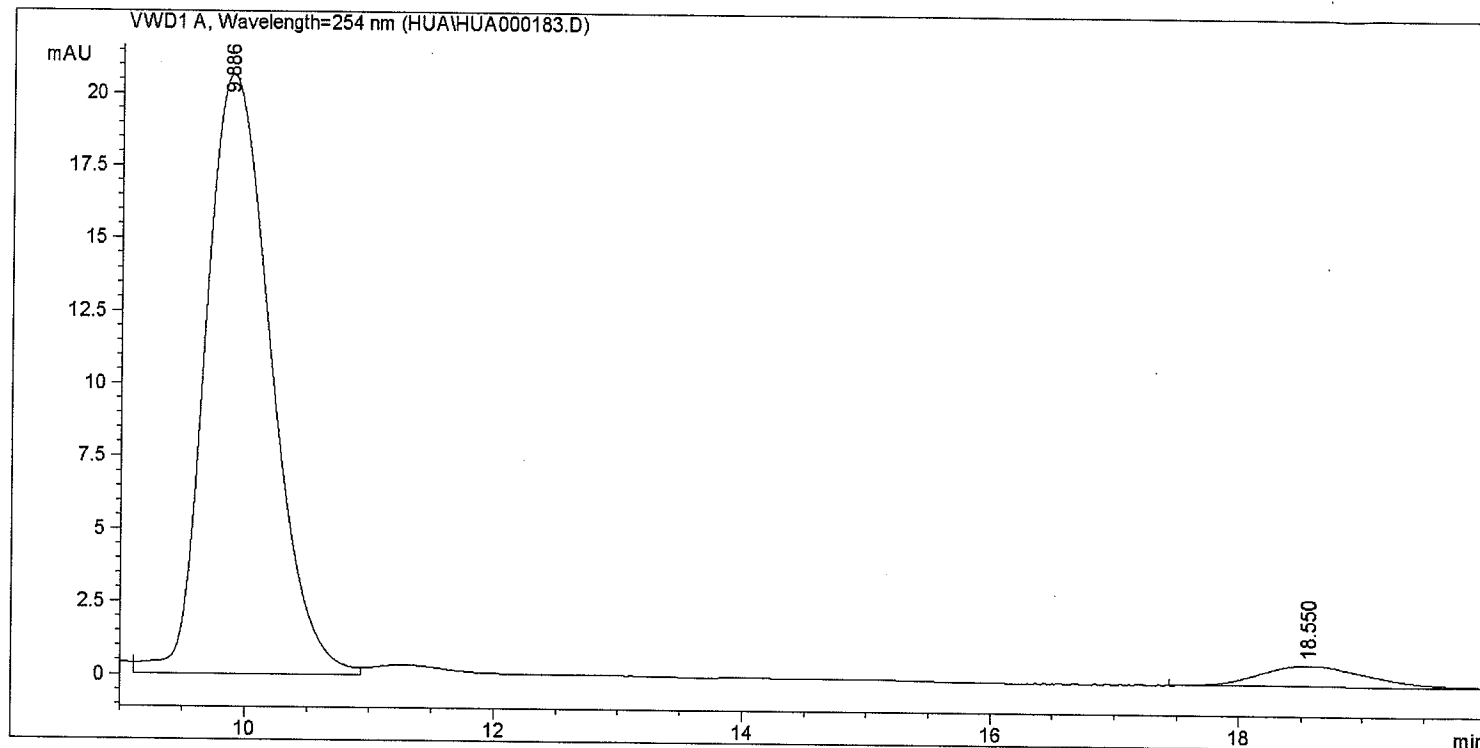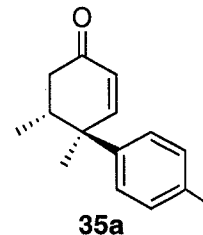Use Multiplier & Dilution Factor with ISTDs

Signal 1: VWD1 A, Wavelength=254 nm

Peak RetTime Type Width   Area   Height   Area
  #   [min]   [min]   mAU   *s   [mAU   ]   %
----|-------|----|-------|----------|----------|--------|
  1   9.886 VV   0.5732 745.82483   20.62910   94.4036
  2 18.550 BBA 0.9160   44.21366 7.18462e-1   5.5964

Data File C:\CHEM32\1\DATA\HUA\HUA000143.D
Sample Name: 14-49 mix

```
==============================================================================
Acq. Operator   : HUA                          Seq. Line  :   1
Acq. Instrument : Instrument 1                  Location   : Vial 1
Injection Date  : 10/25/2009 3:01:55 PM              Inj   :   1
                                            Inj Volume : 5 µl
Acq. Method     : C:\CHEM32\1\METHODS\022008CW.M
Last changed    : 10/25/2009 2:00:29 PM by HUA
Analysis Method : C:\CHEM32\1\METHODS\HUA.M
Last changed    : 3/15/2010 7:24:57 PM by CHAO
                  (modified after loading)
Method Info     : ADanalytical column, 1.0 mL/min, 254 nm, IPA:HEX10:90
```



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==============================================================================
                          Fraction Information
==============================================================================
Fraction collection off
==============================================================================
No Fractions found.
==============================================================================

==============================================================================
                          Area Percent Report
==============================================================================

Sorted By            :      Signal
Multiplier           :      1.0000
Dilution             :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: VWD1 A, Wavelength=254 nm

Peak RetTime Type  Width     Area       Height     Area
  #   [min]        [min]   mAU   *s    [mAU    ]     %
----|-------|----|-------|----------|----------|--------|
  1  16.420 BB   0.9734  139.76315   2.13506   56.1290
  2  20.259 BB   1.1465  109.24050   1.45064   43.8710
```
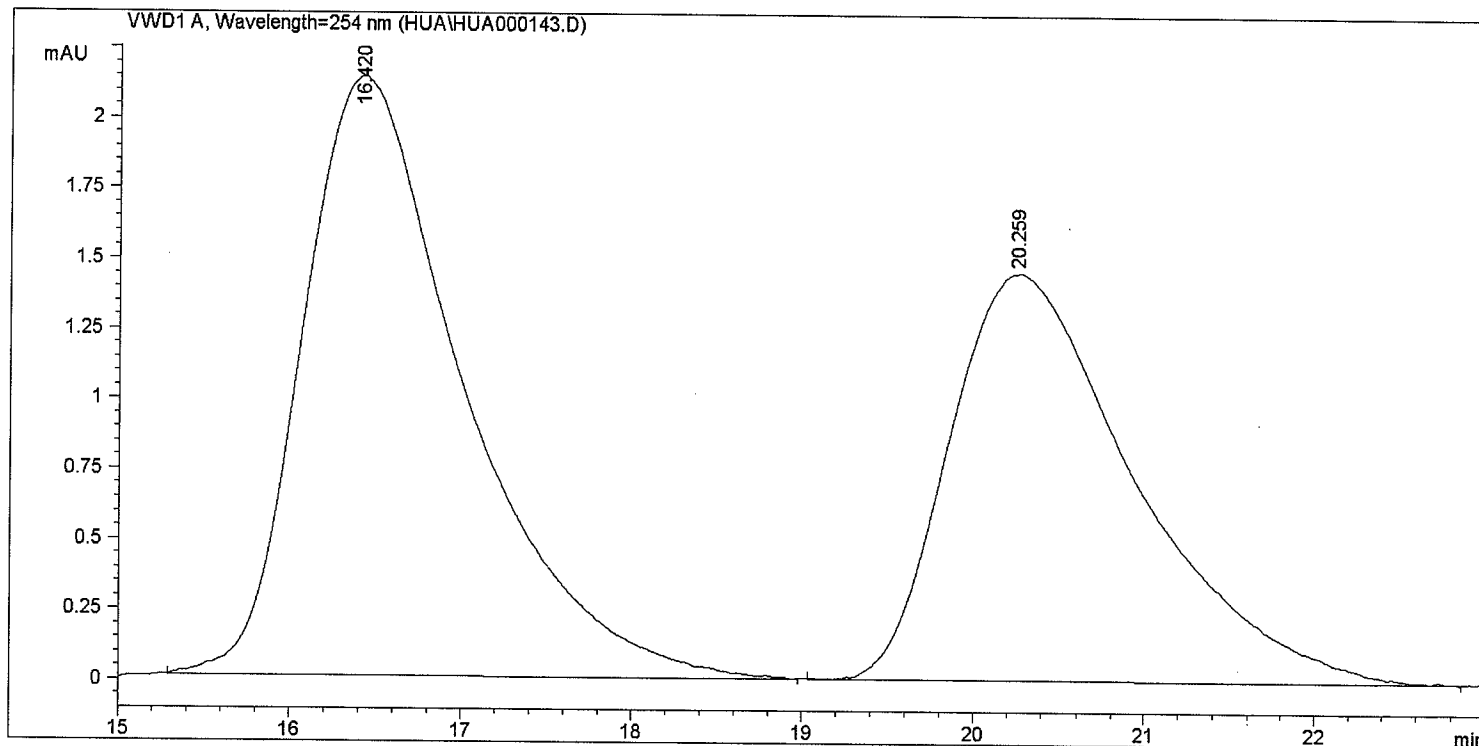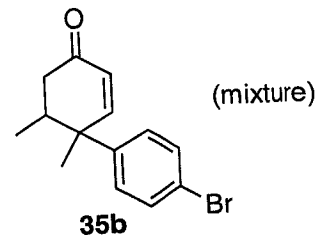
```
==================================================================
```

Acq. Operator   : HUA   Seq. Line :   1
Acq. Instrument : Instrument 1   Location :. Vial 1
Injection Date   : 10/25/2009 2:02:52 PM   Inj :   1
                                          Inj Volume : 5 µl

Acq. Method   : C:\CHEM32\1\METHODS\022008CW.M
Last changed   : 10/25/2009 2:00:29 PM by HUA
Analysis Method : C:\CHEM32\1\METHODS\HUA.M
Last changed   : 3/15/2010 7:26:22 PM by CHAO
                   (modified after loading)
Method Info   : ADanalytical column, 1.0 mL/min, 254 nm, IPA:HEX10:90

VWD1 A, Wavelength=254 nm (HUA\HUA000138.D)

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==================================================================
                     Fraction Information
==================================================================
```
Fraction collection off
```
==================================================================
```
No Fractions found.
```
==================================================================
==================================================================
                     Area Percent Report
==================================================================
```
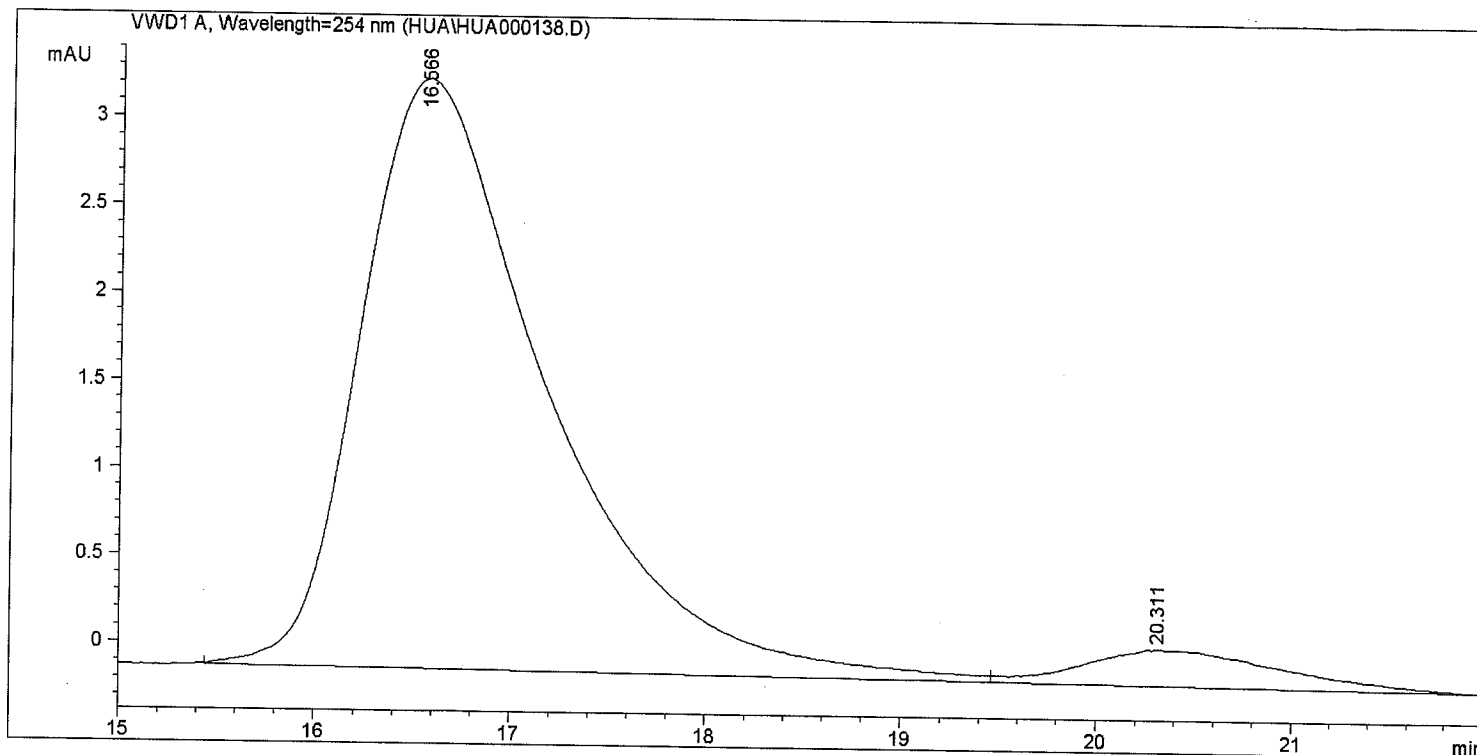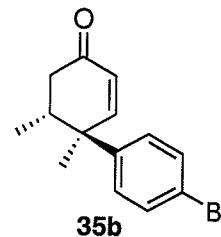
Sorted By   :   Signal
Multiplier   :   1.0000
Dilution   :   1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: VWD1 A, Wavelength=254 nm

Peak #	RetTime [min]	Type	Width [min]	Area mAU *s	Height [mAU]	Area %
1	16.566	BV	0.9814	224.63278	3.37030	93.6499
2	20.311	VBA	0.8964	15.23167	2.09105e-1	6.3501

Data File C:\CHEM32\1\DATA\HUA\HUA000173.D
Sample Name: 14-66 mix

===
Acq. Operator   : HUA   Seq. Line :   1
Acq. Instrument : Instrument 1   Location : Vial
Injection Date : 11/8/2009 8:05:00 PM   Inj :   1
                                            Inj Volume : 5 µl
Acq. Method   : C:\CHEM32\1\METHODS\022008CW.M
Last changed   : 11/8/2009 8:02:43 PM by HUA
Analysis Method : C:\CHEM32\1\METHODS\HUA.M
Last changed   : 3/15/2010 7:27:43 PM by CHAO
                  (modified after loading)
Method Info   : ADanalytical column, 1.0 mL/min, 254 nm, IPA:HEX

(mixture)

35c

VWD1 A, Wavelength=254 nm (HUA\HUA000173.D)

===
                    Fraction Information
===
Fraction collection off
===
No Fractions found.
===
===
                    Area Percent Report
===

Sorted By   :   Signal
Multiplier   :   1.0000
Dilution   :   1.0000
Use Multiplier & Dilution Factor with ISTDs
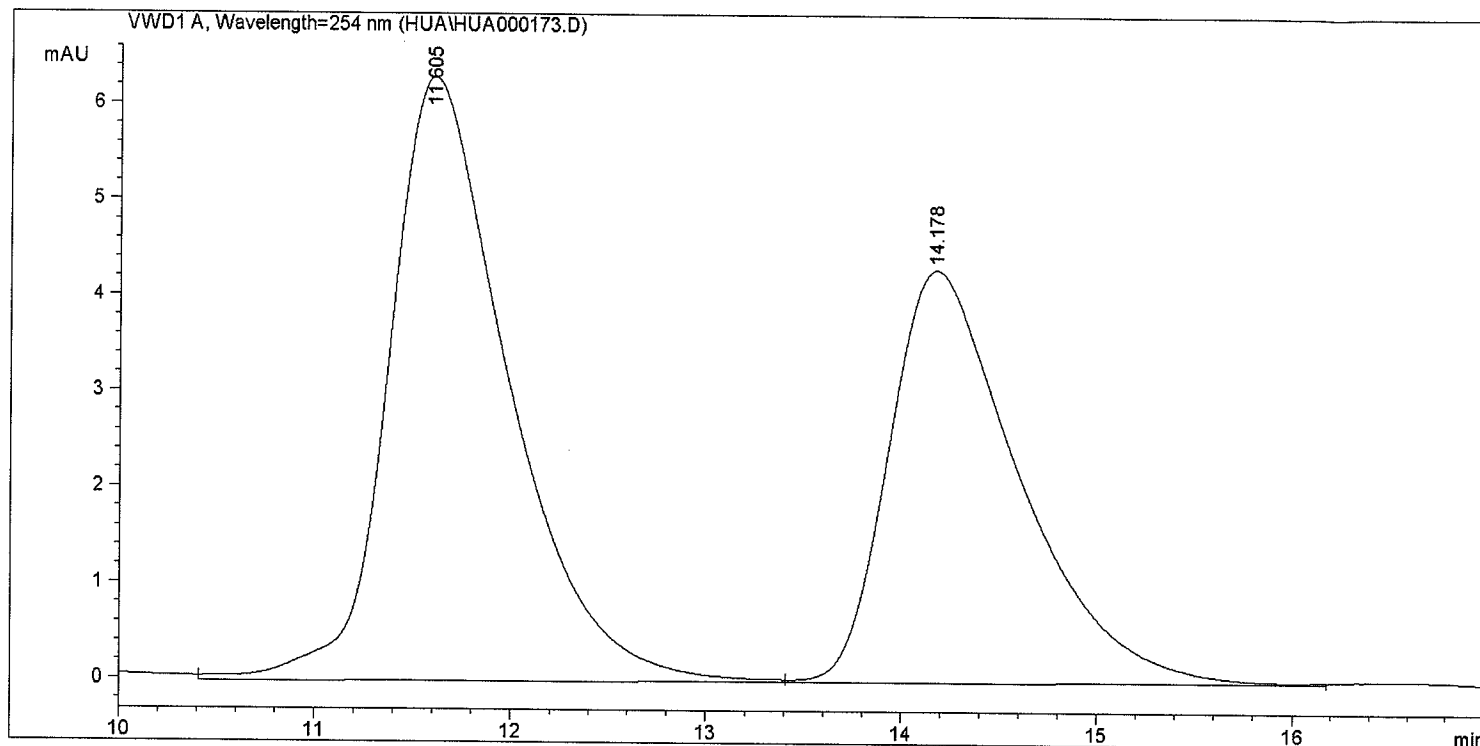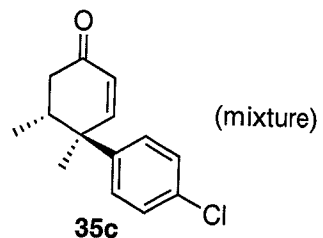

Signal 1: VWD1 A, Wavelength=254 nm

Peak RetTime Type Width   Area   Height   Area
  #   [min]   [min]   mAU   *s   [mAU   ]   %
----|-------|----|-------|----------|----------|--------|
  1 11.605 VV   0.6300   268.10355   6.30592 57.2882
  2 14.178 VB   0.6936   199.88745   4.30113 42.7118

Instrument 1 3/15/2010 7:27:48 PM CHAO   S94   Page   1 of 2

Data File C:\CHEM32\1\DATA\HUA\HUA000176.D
Sample Name: 14-66

```
==============================================================================
Acq. Operator   : HUA                        Seq. Line :      1
Acq. Instrument : Instrument 1               Location : Vial 1
Injection Date  : 11/8/2009 8:36:43 PM           Inj :      1
                                          Inj Volume : 5 µl
Acq. Method     : C:\CHEM32\1\METHODS\022008CW.M
Last changed    : 11/8/2009 8:02:43 PM by HUA
Analysis Method : C:\CHEM32\1\METHODS\HUA.M
Last changed    : 3/15/2010 7:29:21 PM by CHAO
                  (modified after loading)
Method Info     : ADanalytical column, 1.0 mL/min, 254 nm, IPA:HEX10:90
```


35c


```
==============================================================================
                         Fraction Information
==============================================================================
Fraction collection off
==============================================================================
No Fractions found.
==============================================================================
==============================================================================
                         Area Percent Report
==============================================================================

Sorted By            :       Signal
Multiplier           :       1.0000
Dilution             :       1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: VWD1 A, Wavelength=254 nm

Peak RetTime Type  Width     Area      Height      Area
  #   [min]        [min]   mAU   *s    [mAU   ]      %
----|-------|----|-------|----------|----------|--------|
  1  11.625 BB   0.6246  178.03656    4.23317   93.5549
  2  14.223 BBA  0.7505   12.26510  2.32080e-1   6.4451
```
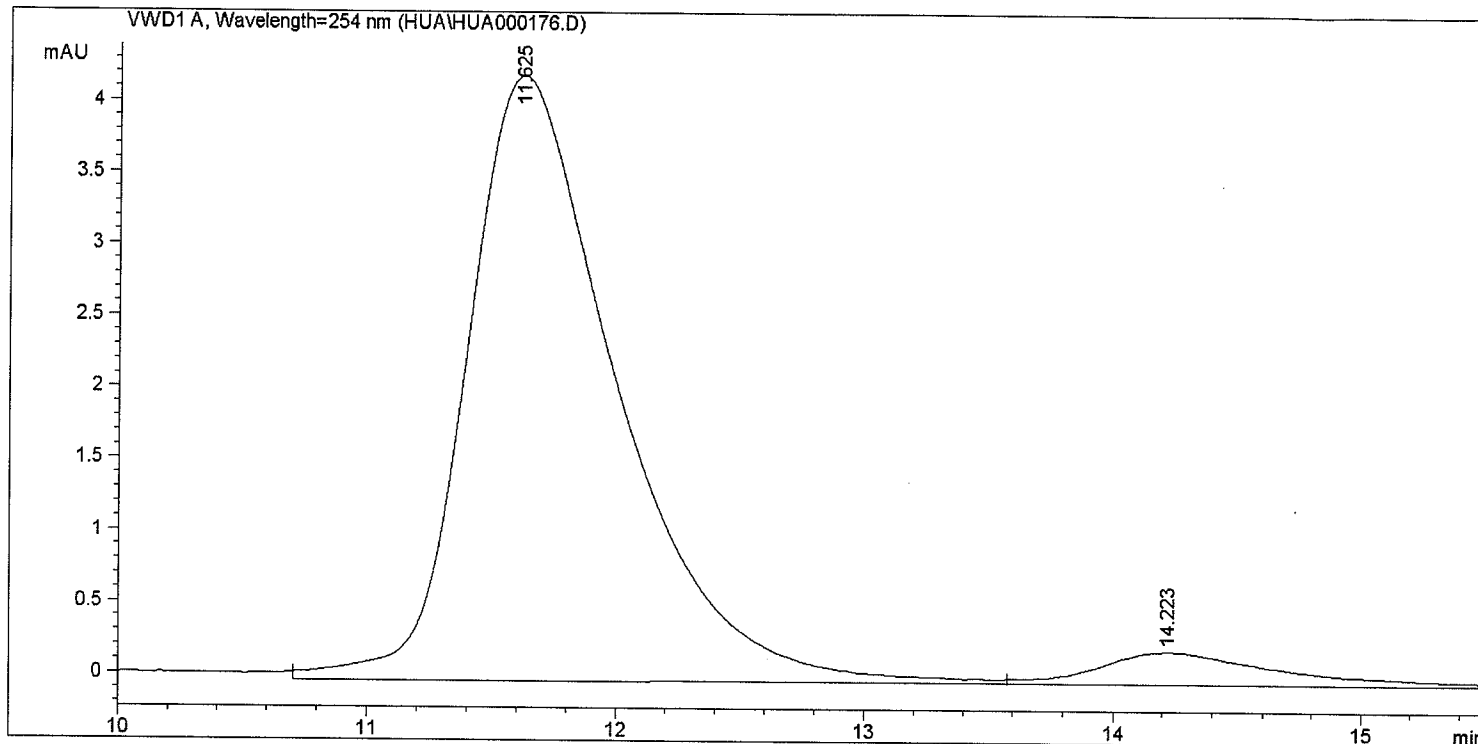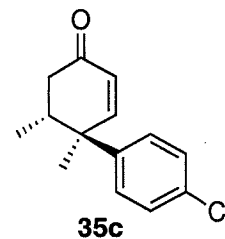
Instrument 1 3/15/2010 7:29:28 PM CHAO   S95   Page   1 of 2

Data File C:\CHEM32\1\DATA\HUA\HUA000123.D
 Sample Name: 14-45 mix

```
==========================================================================
```

Acq. Operator   : Hua   Seq. Line :   1
Acq. Instrument : Instrument 1   Location : Vial
Injection Date : 10/21/2009 1:07:56 PM   Inj :   1
                                                Inj Volume : 5 µl

Acq. Method   : C:\CHEM32\1\METHODS\022008CW.M
Last changed   : 10/21/2009 1:06:03 PM by Hua
Analysis Method : C:\CHEM32\1\METHODS\HUA.M
Last changed   : 3/15/2010 7:30:28 PM by CHAO
                  (modified after loading)
Method Info   : ADanalytical column, 1.0 mL/min, 254 nm, IPA:HEX10:90

(mixture)

35d


```
==========================================================================
                          Fraction Information
==========================================================================
Fraction collection off
==========================================================================
No Fractions found.
==========================================================================

==========================================================================
                          Area Percent Report
==========================================================================
```

Sorted By   :   Signal
Multiplier   :   1.0000
Dilution   :   1.0000
Use Multiplier & Dilution Factor with ISTDs
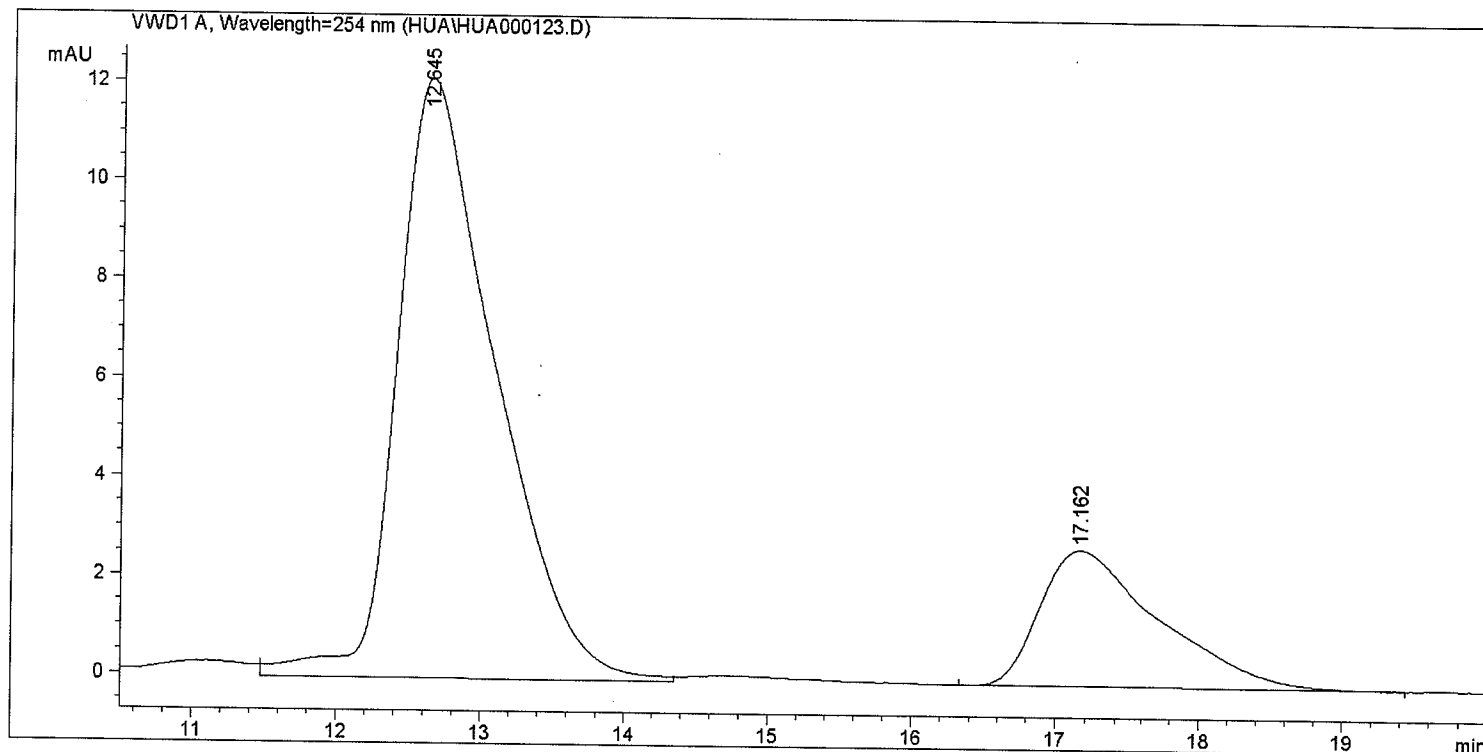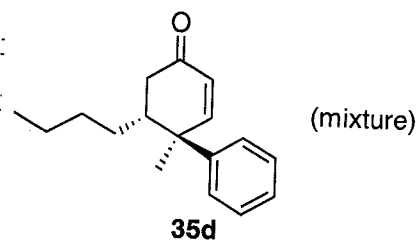

Signal 1: VWD1 A, Wavelength=254 nm

```
Peak RetTime Type  Width     Area       Height      Area
  #   [min]        [min]   mAU   *s    [mAU   ]       %
----|-------|----|-------|----------|-----------|--------|
   1  12.645 VV   0.6870   576.06317   12.15295   78.3915
   2  17.162 VB   0.8334   158.79095    2.76386   21.6085
```

Instrument 1 3/15/2010 7:30:33 PM CHAO   S96   Page   1 of 2

Data File C:\CHEM32\1\DATA\HUA\HUA000128.D
Sample Name: 14-40

==
Acq. Operator   : Hua   Seq. Line :   1
Acq. Instrument : Instrument 1   Location : Vial 1
Injection Date   : 10/21/2009 2:05:50 PM   Inj :   1
                                            Inj Volume : 5 μl
Acq. Method   : C:\CHEM32\1\METHODS\022008CW.M
Last changed   : 10/21/2009 1:06:03 PM by Hua
Analysis Method : C:\CHEM32\1\METHODS\HUA.M
Last changed   : 3/15/2010 7:32:54 PM by CHAO
                   (modified after loading)
Method Info   : ADanalytical column, 1.0 mL/min, 254 nm, IPA:HEX10:90

35d

VWD1 A, Wavelength=254 nm (HUA\HUA000128.D)

==
                    Fraction Information
==
Fraction collection off
==
No Fractions found.
==
==
                    Area Percent Report
==
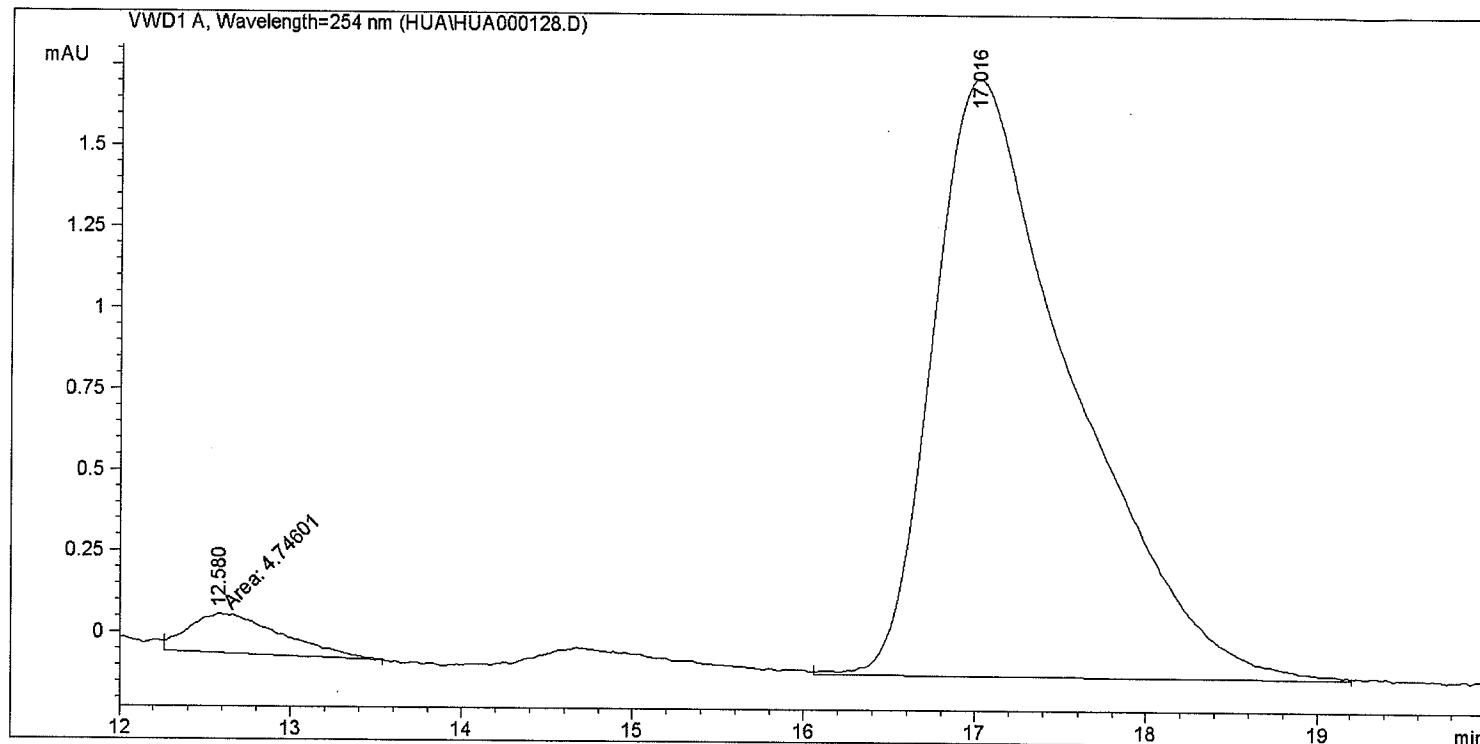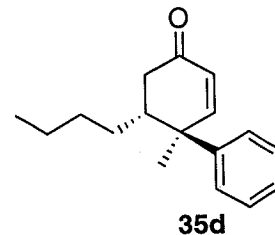
Sorted By   :   Signal
Multiplier   :   1.0000
Dilution   :   1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: VWD1 A, Wavelength=254 nm

Peak RetTime Type Width   Area   Height   Area
 #   [min]   [min]   mAU   *s   [mAU   ]   %
----|-------|----|-------|----------|----------|--------|
  1 12.580 MM   0.6428   4.74601 1.23059e-1 4.3415
  2 17.016 VB   0.8201 104.57047   1.84049 95.6585

Instrument 1 3/15/2010 7:33:08 PM CHAO   S97   Page   1 of 2

```
===================================================================
Acq. Operator   : HUA                        Seq. Line :
Acq. Instrument : Instrument 1                 Location : '
Injection Date  : 11/13/2009 5:57:39 PM            Inj :
                                            Inj Volume :

Acq. Method     : C:\CHEM32\1\METHODS\022008CW.M
Last changed    : 11/13/2009 5:55:38 PM by HUA
Analysis Method : C:\CHEM32\1\METHODS\HUA.M
Last changed    : 3/15/2010 7:35:03 PM by CHAO
                  (modified after loading)
Method Info     : ADanalytical column, 1.0 mL/min, 254 nm, IPA:HEX10:90
```


VWD1 A, Wavelength=254 nm (HUA\HUA000206.D)

```
===================================================================
                    Fraction Information
===================================================================
Fraction collection off
===================================================================
No Fractions found.
===================================================================
===================================================================
                    Area Percent Report
===================================================================

Sorted By          :        Signal
Multiplier         :        1.0000
Dilution           :        1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: VWD1 A, Wavelength=254 nm

Peak RetTime Type  Width     Area        Height      Area
  #   [min]        [min]   mAU   *s     [mAU   ]       %
----|-------|----|-------|----------|----------|--------|
  1  34.071 VV   1.4340 1082.38135   11.45858  62.4364
  2  38.192 VB   1.2800  651.19427    7.86897  37.5636
```
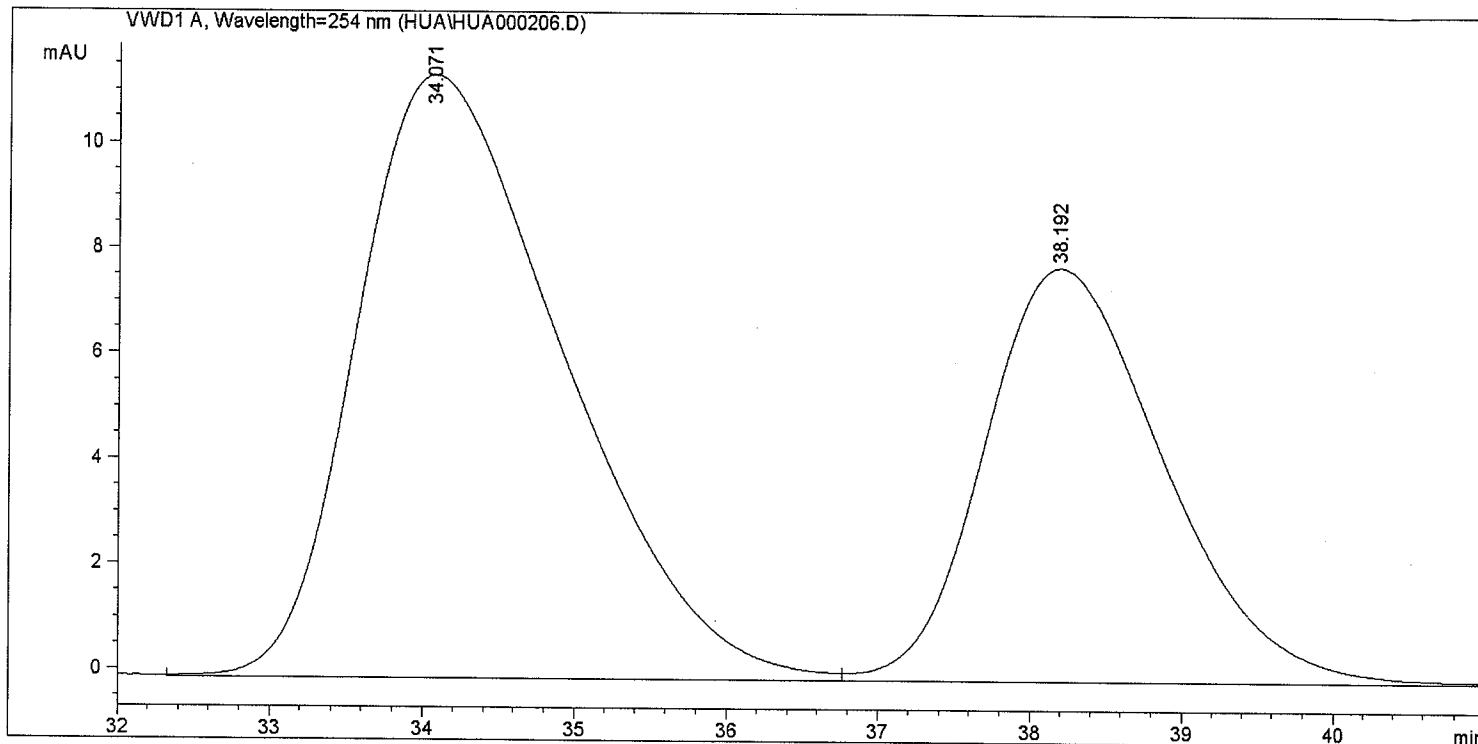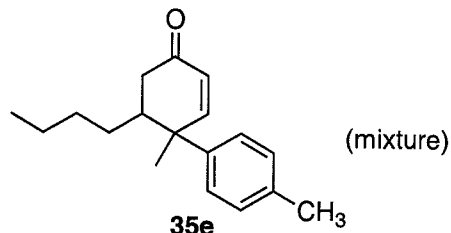
Data File C:\CHEM32\1\DATA\HUA\HUA000208.D
 Sample Name: 14-73

```
=========================================================================
Acq. Operator   : HUA                        Seq. Line :    1
Acq. Instrument : Instrument 1                Location : Vial
Injection Date  : 11/13/2009 8:47:25 PM            Inj :    1
                                           Inj Volume : 5 µl
Acq. Method     : C:\CHEM32\1\METHODS\022008CW.M
Last changed    : 11/13/2009 5:55:38 PM by HUA
Analysis Method : C:\CHEM32\1\METHODS\HUA.M
Last changed    : 3/15/2010 7:36:26 PM by CHAO
                  (modified after loading)
Method Info     : ADanalytical column, 1.0 mL/min, 254 nm, IPA:HE
```
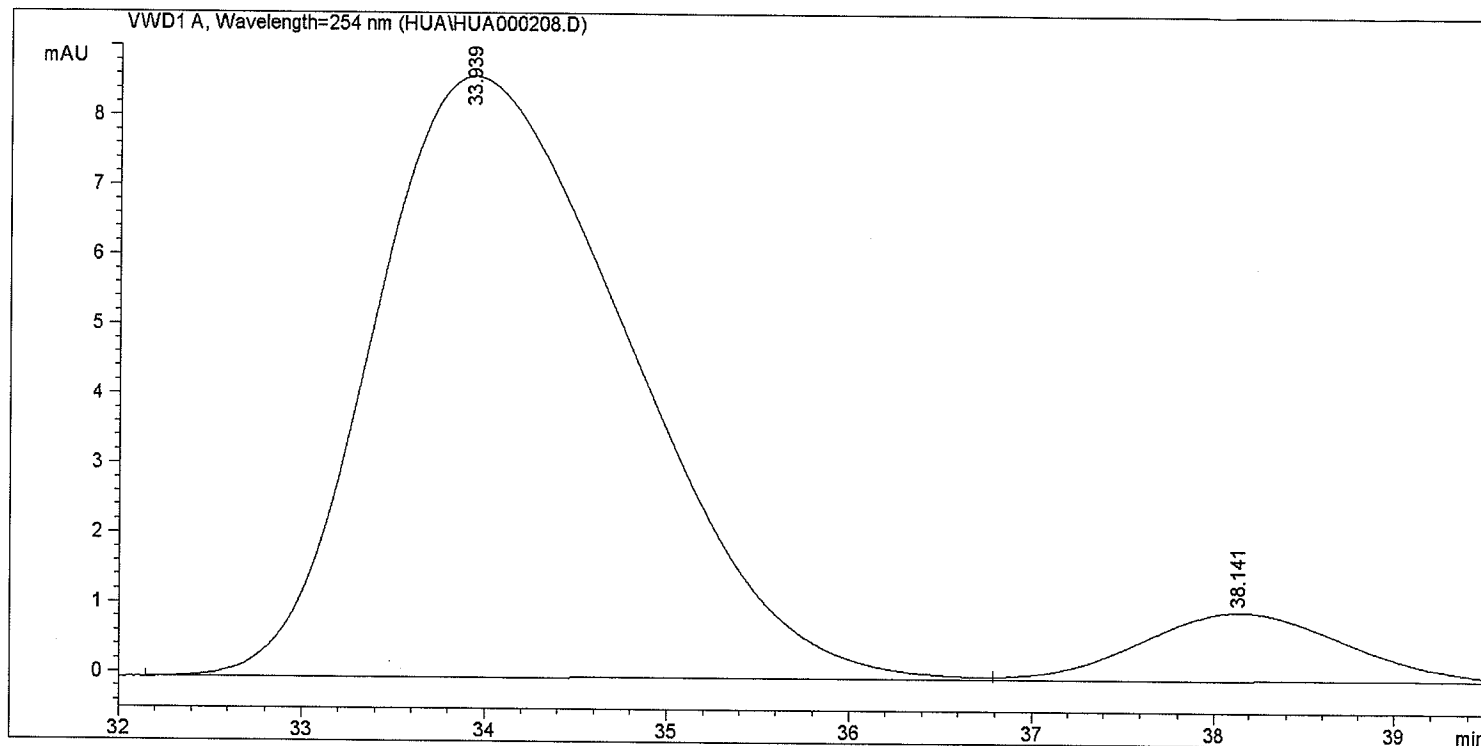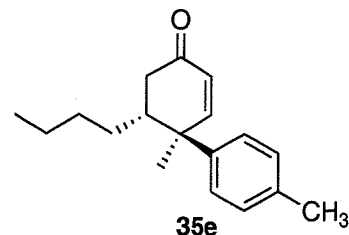

35e

VWD1 A, Wavelength=254 nm (HUA\HUA000208.D)

```
=========================================================================
                         Fraction Information
=========================================================================
Fraction collection off
=========================================================================
No Fractions found.
=========================================================================
=========================================================================
                         Area Percent Report
=========================================================================

Sorted By             :       Signal
Multiplier            :       1.0000
Dilution              :       1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: VWD1 A, Wavelength=254 nm

Peak RetTime Type  Width     Area        Height        Area
  #   [min]        [min]   mAU   *s      [mAU   ]        %
----|-------|----|-------|----------|-----------|--------|
  1  33.939 VV    1.5607   836.48260    8.63813   91.4711
  2  38.141 VBA   1.2410    77.99489  9.82175e-1   8.5289
```

Data File C:\CHEM32\1\DATA\HUA\HUA000199.D
Sample Name: 14-71 mix

```
================================================================
```

Acq. Operator   : HUA   Seq. Line :
Acq. Instrument : Instrument 1   Location : V
Injection Date : 11/12/2009 8:46:47 PM   Inj :
                                           Inj Volume : 5

Acq. Method   : C:\CHEM32\1\METHODS\022008CW.M
Last changed   : 11/12/2009 3:28:38 PM by HUA
Analysis Method : C:\CHEM32\1\METHODS\HUA.M
Last changed   : 3/15/2010 7:36:34 PM by CHAO
                  (modified after loading)
Method Info   : ADanalytical column, 1.0 mL/min, 254 nm, IPA:HEX10.90


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================================================================
```
                          Fraction Information
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================================================================
```
Fraction collection off
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================================================================
```
No Fractions found.
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```
                          Area Percent Report
```
================================================================
```

Sorted By   :   Signal
Multiplier   :   1.0000
Dilution   :   1.0000
Use Multiplier & Dilution Factor with ISTDs
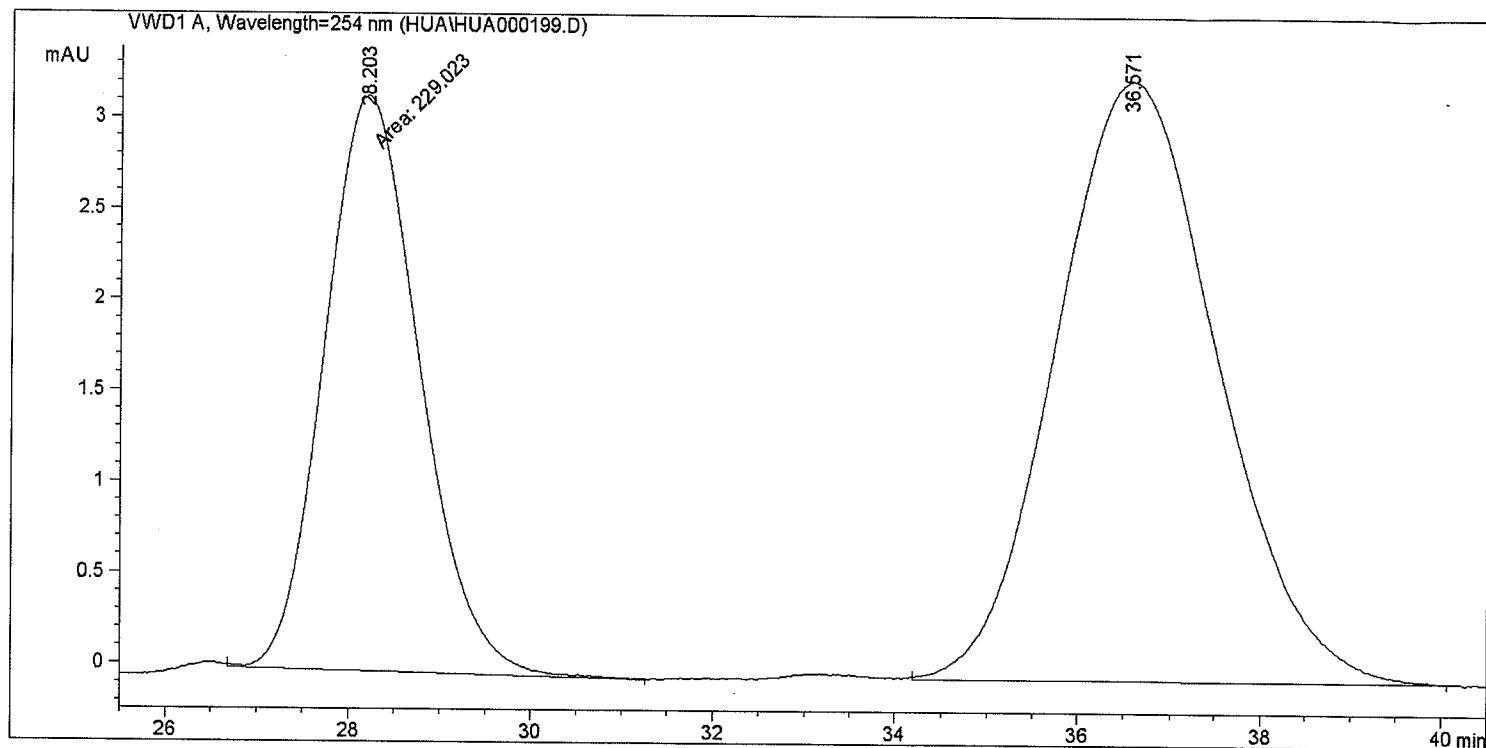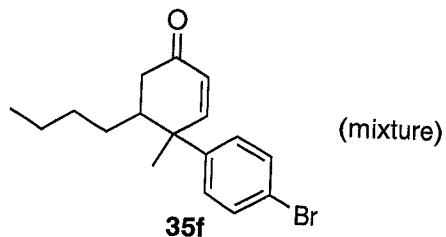

Signal 1: VWD1 A, Wavelength=254 nm

Peak #	RetTime [min]	Type	Width [min]	Area mAU *s	Height [mAU]	Area %
1	28.203	MM	1.2065	229.02348	3.16382	36.0976
2	36.571	BB	1.8783	405.43280	3.29458	63.9024

Data File C:\CHEM32\1\DATA\HUA\HUA000196.D
Sample Name: 14-72

```
========================================================================
Acq. Operator   : HUA                        Seq. Line :    1
Acq. Instrument : Instrument 1               Location : Vial 1
Injection Date  : 11/12/2009 4:47:24 PM           Inj :    1
                                          Inj Volume : 5 µl
Acq. Method     : C:\CHEM32\1\METHODS\022008CW.M
Last changed    : 11/12/2009 3:28:38 PM by HUA
Analysis Method : C:\CHEM32\1\METHODS\HUA.M
Last changed    : 3/15/2010 7:39:48 PM by CHAO
                  (modified after loading)
Method Info     : ADanalytical column, 1.0 mL/min, 254 nm, IPA:HEX10:90
```
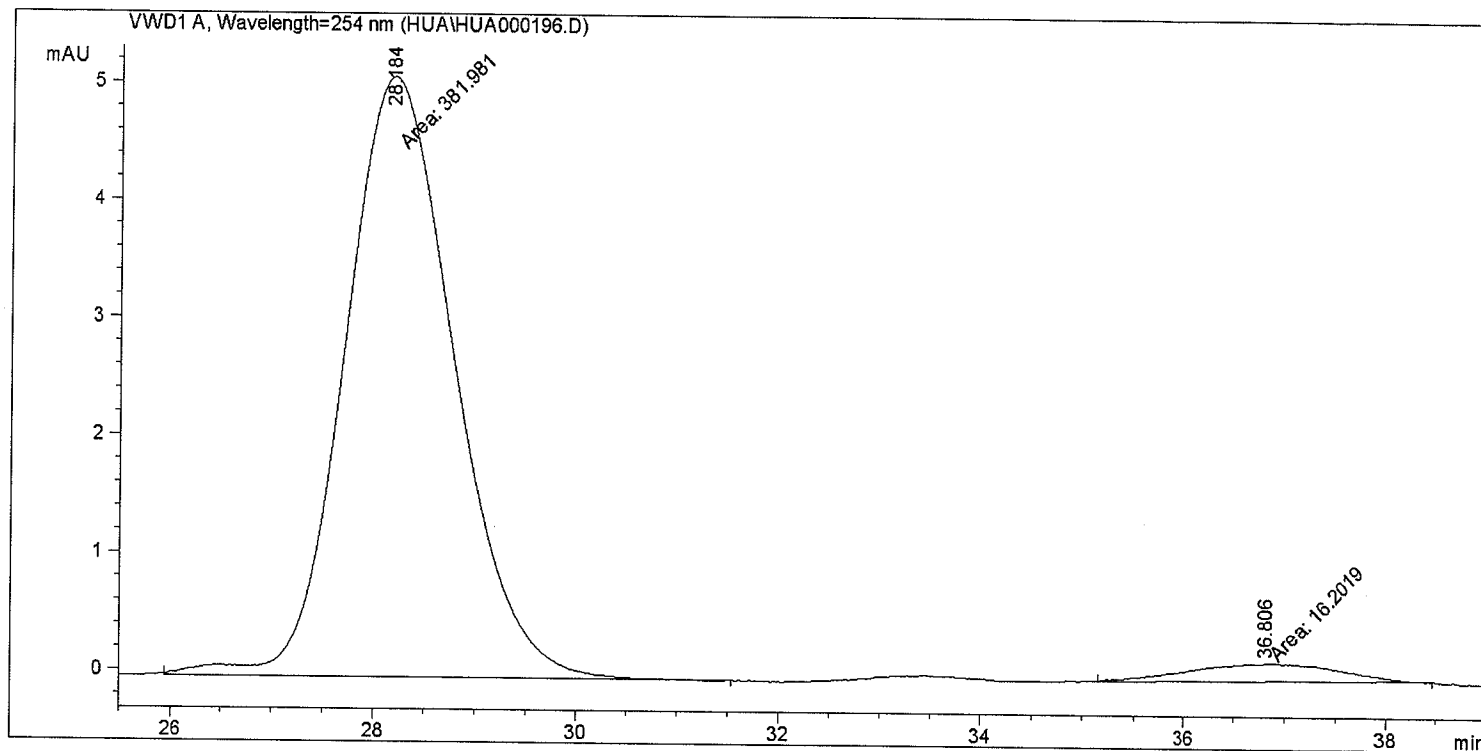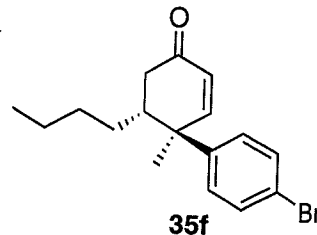


```
========================================================================
                        Fraction Information
========================================================================
Fraction collection off
========================================================================
No Fractions found.
========================================================================
========================================================================
                        Area Percent Report
========================================================================


Sorted By           :       Signal
Multiplier          :       1.0000
Dilution            :       1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: VWD1 A, Wavelength=254 nm

Peak RetTime Type  Width     Area       Height      Area
  #   [min]        [min]   mAU   *s    [mAU    ]      %
----|-------|----|-------|----------|----------|--------|
  1   28.184 MM   1.2459  381.98132    5.10981  95.9310
  2   36.806 MM   1.7635   16.20193  1.53122e-1   4.0690
```

Data File C:\CHEM32\1\DATA\HUA\HUA000048.D
 Sample Name: 13-96mix

```
===========================================================================
Acq. Operator   : Hua                           Seq. Line :    1
Acq. Instrument : Instrument 1                   Location : Via
Injection Date  : 9/25/2009 2:02:26 PM                 Inj :
                                             Inj Volume : 5
Acq. Method     : C:\CHEM32\1\METHODS\022008CW.M
Last changed    : 9/25/2009 2:00:26 PM by Hua
Analysis Method : C:\CHEM32\1\METHODS\HUA.M
Last changed    : 3/15/2010 7:40:47 PM by CHAO
                  (modified after loading)
Method Info     : ADanalytical column, 1.0 mL/min, 254 nm, IPA:HEX10:90
```


(mixture)

38


```
===========================================================================
                      Fraction Information
===========================================================================
Fraction collection off
===========================================================================
No Fractions found.
===========================================================================
===========================================================================
                       Area Percent Report
===========================================================================

Sorted By            :        Signal
Multiplier           :        1.0000
Dilution             :        1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: VWD1 A, Wavelength=254 nm

Peak RetTime Type  Width     Area       Height      Area
  #   [min]        [min]   mAU   *s    [mAU   ]       %
----|-------|----|-------|----------|-----------|--------|
   1  23.493 BB   1.3267  129.00116     1.39086  28.7451
   2  29.169 BB   1.5678  319.77557     2.92245  71.2549
```
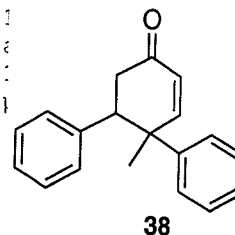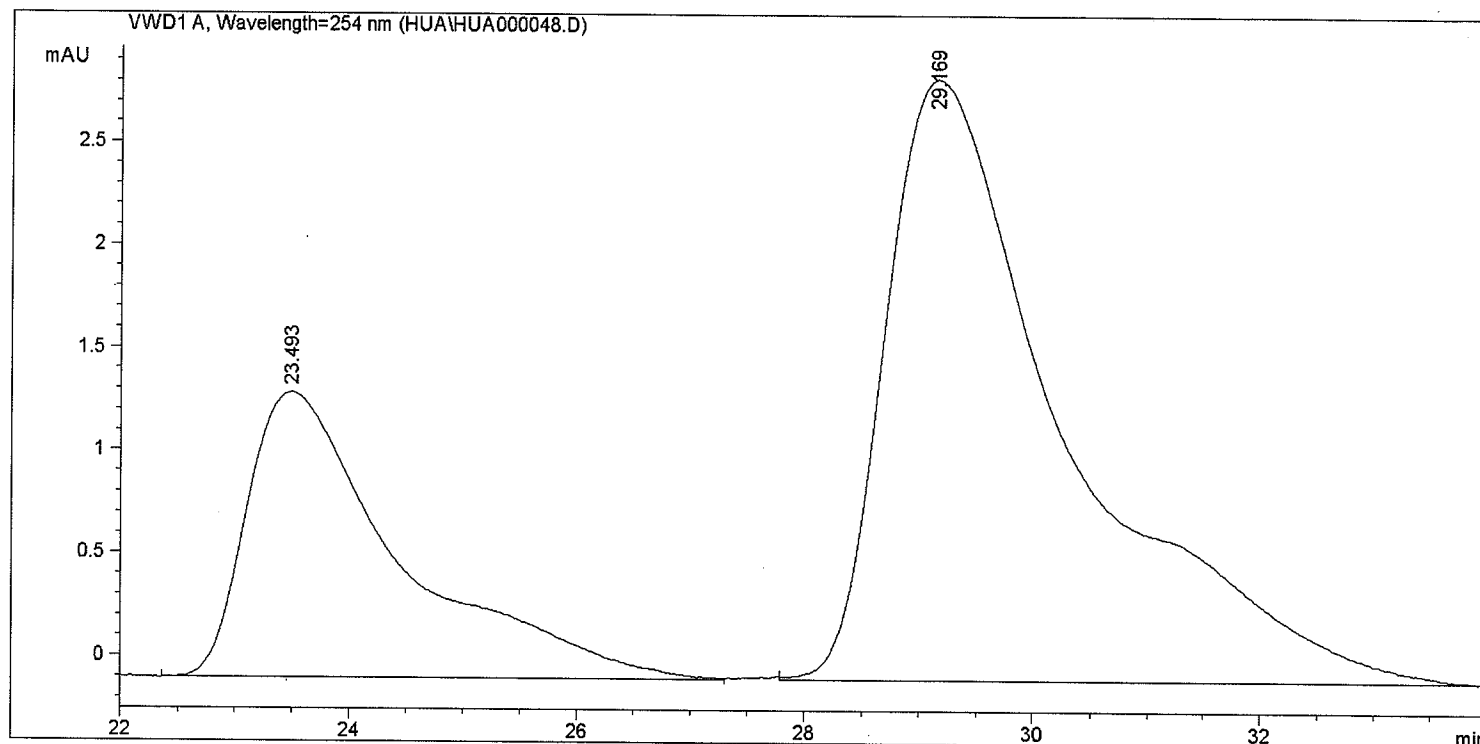
Instrument 1 3/15/2010 7:41:50 PM CHAO   S102   Page   1 of 2

Data File C:\CHEM32\1\DATA\HUA\HUA000106.D
Sample Name: 14-37

```
===================================================================
```
Acq. Operator   : Hua   Seq. Line :   1
Acq. Instrument : Instrument 1   Location : Vial 1
Injection Date   : 10/15/2009 7:37:53 PM   Inj :   `1
                                          Inj Volume : 5 µl

Acq. Method   : C:\CHEM32\1\METHODS\022008CW.M
Last changed   : 10/15/2009 5:01:03 PM by Hua
Analysis Method : C:\CHEM32\1\METHODS\HUA.M
Last changed   : 3/15/2010 7:41:50 PM by CHAO
                   (modified after loading)
Method Info   : ADanalytical column, 1.0 mL/min, 254 nm, IPA:HEX10:90

38


```
===================================================================
```
                       Fraction Information
```
===================================================================
```
Fraction collection off
```
===================================================================
```
No Fractions found.
```
===================================================================
```
```
===================================================================
```
                       Area Percent Report
```
===================================================================
```

Sorted By   :   Signal
Multiplier   :   1.0000
Dilution   :   1.0000
Use Multiplier & Dilution Factor with ISTDs
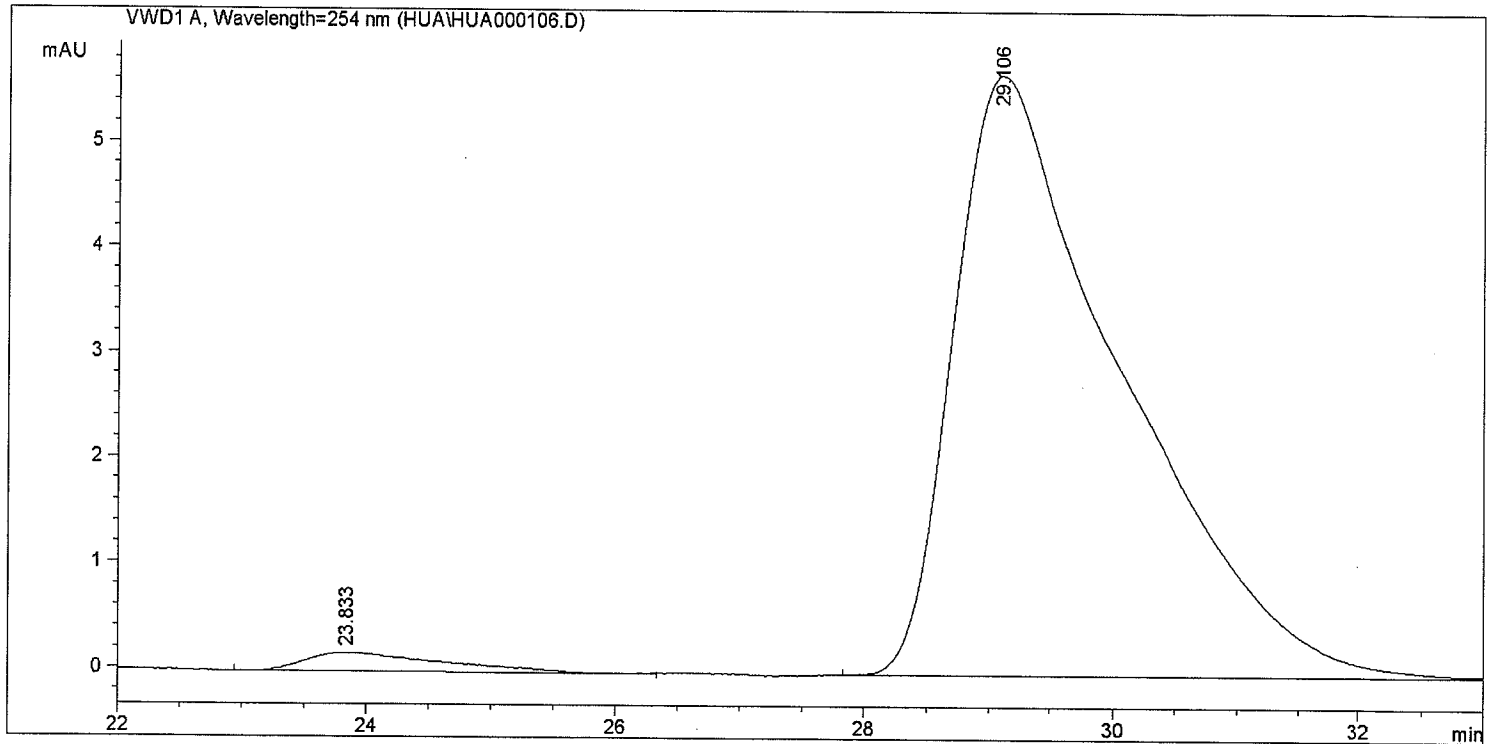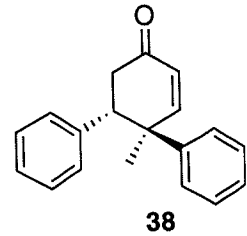

Signal 1: VWD1 A, Wavelength=254 nm

Peak RetTime Type Width   Area   Height   Area
  #   [min]   [min]   mAU   *s   [mAU   ]   %
----|-------|----|-------|----------|----------|--------|
  1 23.833 BB   1.0435   13.80718 1.77099e-1   2.5058
  2 29.106 BB   1.3256 537.20923   5.70541   97.4942

Instrument 1 3/15/2010 7:42:49 PM CHAO   S103   Page   1 of 2

Data File C:\CHEM32\1\DATA\HUA\HUA000063.D
Sample Name: 14-3 mix

```
=========================================================================
Acq. Operator   : Hua                         Seq. Line :    1
Acq. Instrument : Instrument 1                 Location : Via
Injection Date  : 9/29/2009 5:53:14 PM              Inj :    1
                                             Inj Volume : 5 }
Acq. Method     : C:\CHEM32\1\METHODS\022008CW.M
Last changed    : 9/29/2009 5:00:17 PM by Hua
Analysis Method : C:\CHEM32\1\METHODS\HUA.M
Last changed    : 3/15/2010 7:42:49 PM by CHAO
                  (modified after loading)
Method Info     : ADanalytical column, 1.0 mL/min, 254 nm, IPA:]
```
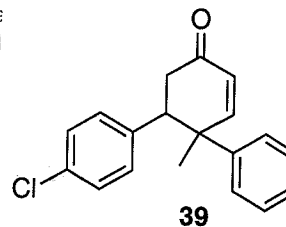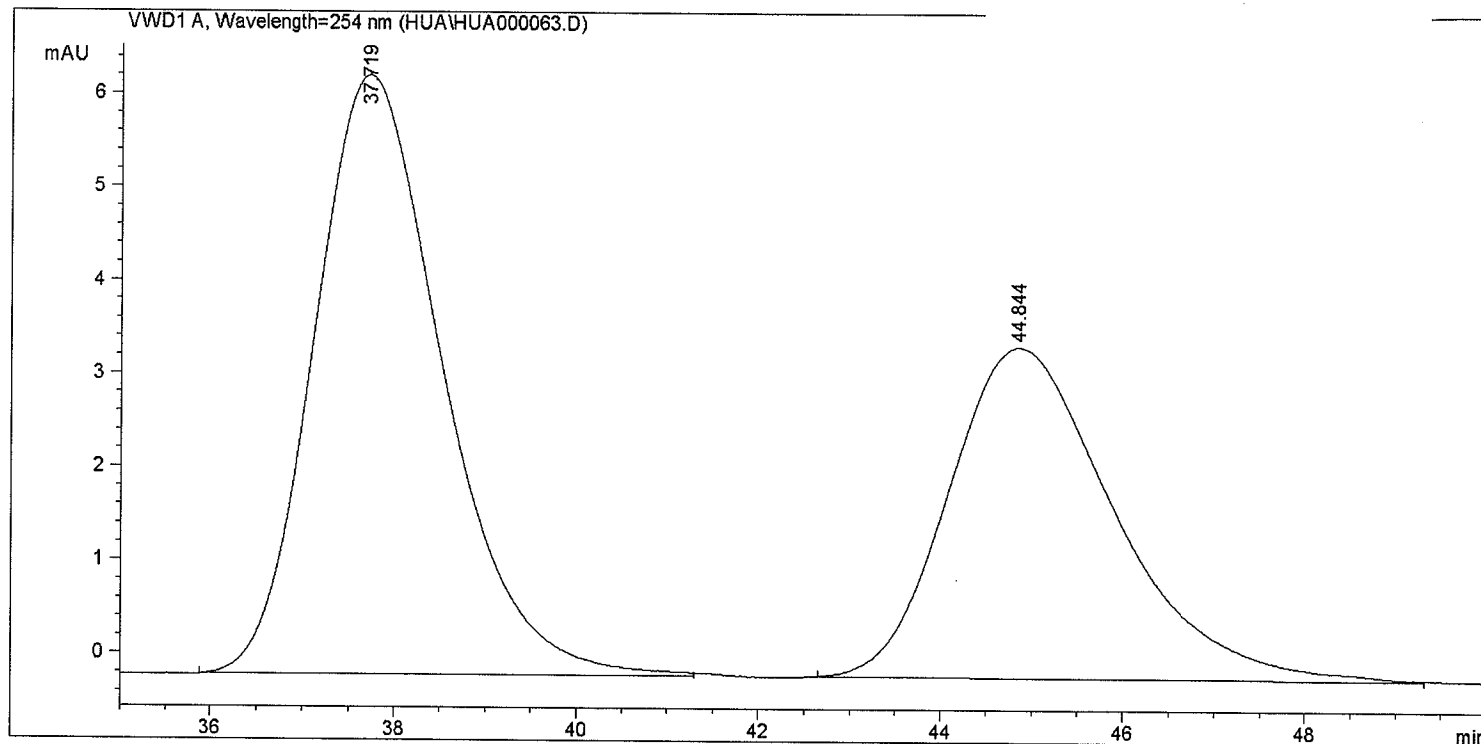

(mixture)

39

VWD1 A, Wavelength=254 nm (HUA\HUA000063.D)

```
=========================================================================
                          Fraction Information
=========================================================================
Fraction collection off
=========================================================================
No Fractions found.
=========================================================================
=========================================================================
                          Area Percent Report
=========================================================================

Sorted By           :        Signal
Multiplier          :        1.0000
Dilution            :        1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: VWD1 A, Wavelength=254 nm

Peak RetTime Type  Width     Area       Height     Area
  #   [min]        [min]  mAU   *s    [mAU   ]       %
----|-------|----|-------|----------|----------|--------|
  1  37.719 BB   1.5028   625.80396    6.42740  58.3159
  2  44.844 BB   1.8810   447.32410    3.54212  41.6841
```

Instrument 1 3/15/2010 7:44:00 PM CHAO   S104   Page   1 of 2

==

Acq. Operator   : HUA   Seq. Line : 1
Acq. Instrument : Instrument 1   Location : Vial 1
Injection Date : 10/18/2009 9:00:42 PM   Inj : 1
                                          Inj Volume : 5 µl
Acq. Method   : C:\CHEM32\1\METHODS\022008CW.M
Last changed   : 10/18/2009 8:58:45 PM by HUA
Analysis Method : C:\CHEM32\1\METHODS\HUA.M
Last changed   : 3/15/2010 7:44:47 PM by CHAO
                  (modified after loading)
Method Info   : ADanalytical column, 1.0 mL/min, 254 nm, IPA:HEX10:90

VWD1 A, Wavelength=254 nm (HUA\HUA000113.D)

==
                       Fraction Information
==
Fraction collection off
==
No Fractions found.
==

==
                      Area Percent Report
==

Sorted By   :   Signal
Multiplier   :   1.0000
Dilution   :   1.0000
Use Multiplier & Dilution Factor with ISTDs
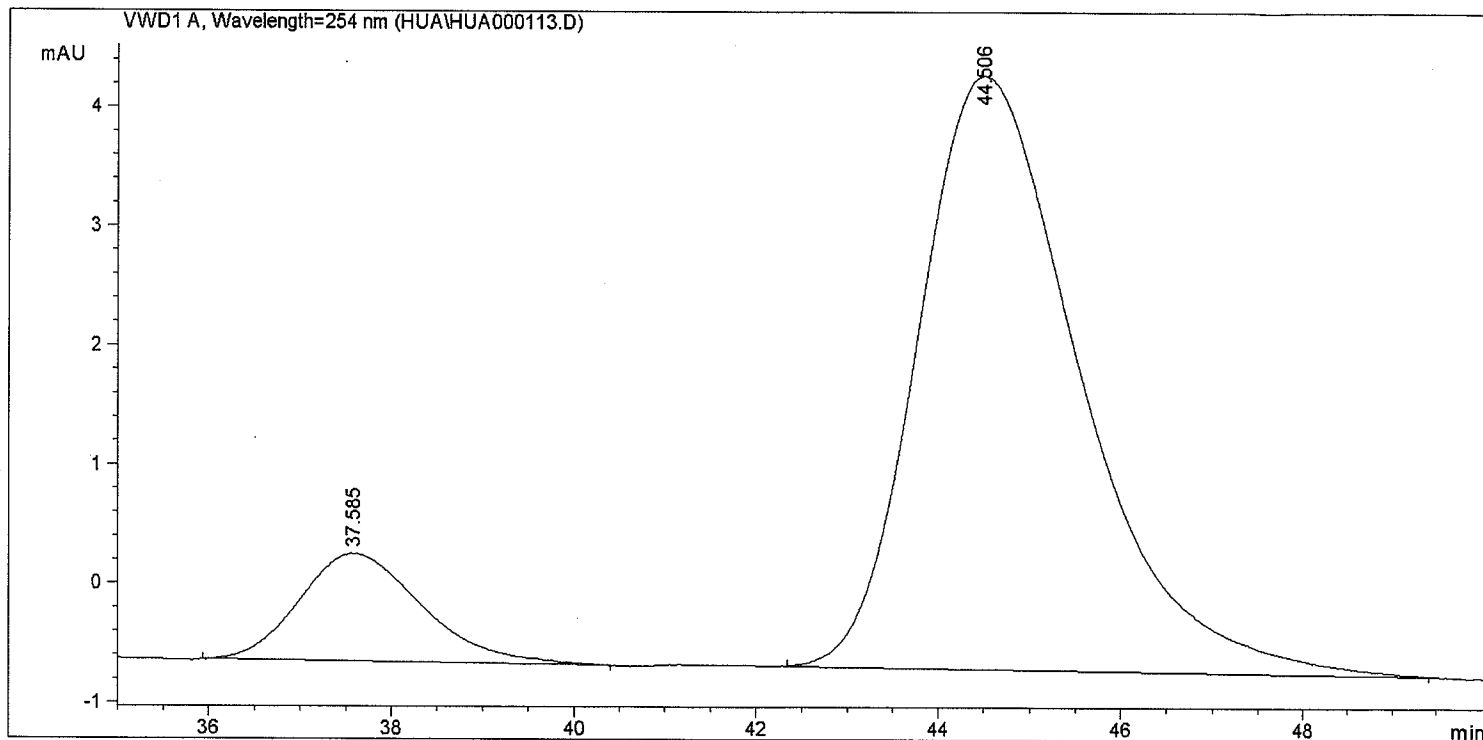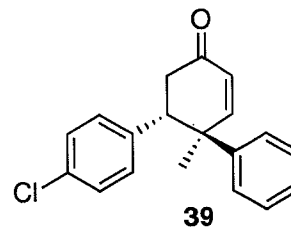

Signal 1: VWD1 A, Wavelength=254 nm

Peak RetTime Type Width   Area   Height   Area
  #   [min]   [min]   mAU   *s   [mAU   ]   %
----|-------|----|-------|----------|----------|--------|
   1 37.585 BB   1.3767   85.15369 9.05517e-1 12.2267
   2 44.506 BB   1.8555   611.30365   4.98627   87.7733

Data File C:\CHEM32\1\DATA\HUA\HUA000699.D
Sample Name: 15-57mix

```
==================================================
Acq. Operator   : Chris                    Seq. Line :   1
Acq. Instrument : Instrument 1              Location : Vial
Injection Date  : 2/23/2010 1:32:03 PM          Inj :   1
                                          Inj Volume : 5 µl
Acq. Method     : C:\CHEM32\1\METHODS\HUA.M
Last changed    : 2/23/2010 1:30:03 PM by Chris
Analysis Method : C:\CHEM32\1\METHODS\HUA.M
Last changed    : 3/15/2010 7:45:04 PM by CHAO
                  (modified after loading)
Method Info     : ADanalytical column, 1.0 mL/min, 254 nm, IPA:HEX10:90
```


44 (mixture)


```
==================================================================
                      Fraction Information
==================================================================
Fraction collection off
==================================================================
No Fractions found.
==================================================================
==================================================================
                       Area Percent Report
==================================================================

Sorted By          :        Signal
Multiplier         :        1.0000
Dilution           :        1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: VWD1 A, Wavelength=254 nm

Peak RetTime Type  Width      Area        Height       Area
  #   [min]        [min]   mAU   *s    [mAU    ]         %
----|-------|----|-------|----------|----------|--------|
  1  20.283 BB   0.8339  36.67739  6.60828e-1  51.1423
  2  24.012 BB   0.9685  35.03900  5.42867e-1  48.8577
```
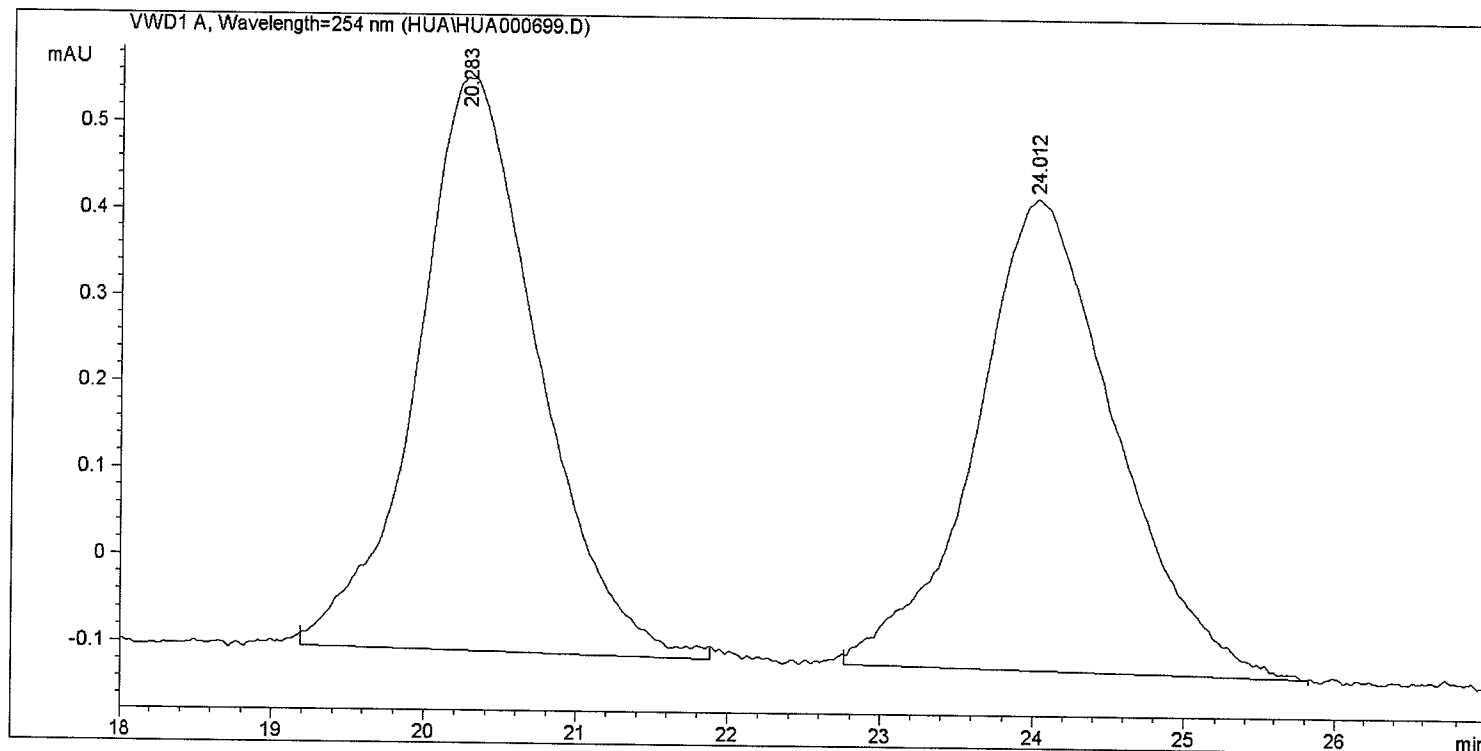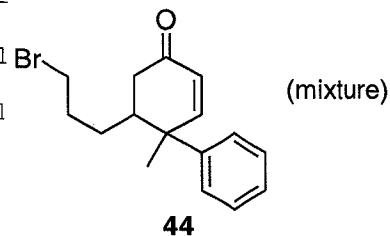
```
Data File C:\CHEM32\1\DATA\HUA\HUA000703.D
 Sample Name: 15-57
```

```
===================================================================
Acq. Operator   : Chris                      Seq. Line :   1
Acq. Instrument : Instrument 1                 Location : Vial 1
Injection Date  : 2/23/2010 2:06:58 PM              Inj :   1
                                          Inj Volume : 5 µl
Acq. Method     : C:\CHEM32\1\METHODS\HUA.M
Last changed    : 2/23/2010 1:30:03 PM by Chris
Analysis Method : C:\CHEM32\1\METHODS\HUA.M
Last changed    : 3/15/2010 7:45:59 PM by CHAO
                  (modified after loading)
Method Info     : ADanalytical column, 1.0 mL/min, 254 nm, IPA:HEX10:90
```

44

```
===================================================================
                      Fraction Information
===================================================================
Fraction collection off
===================================================================
No Fractions found.
===================================================================
===================================================================
                       Area Percent Report
===================================================================

Sorted By          :        Signal
Multiplier         :        1.0000
Dilution           :        1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: VWD1 A, Wavelength=254 nm

Peak RetTime Type   Width     Area      Height      Area
  #   [min]        [min]   mAU   *s   [mAU   ]      %
----|-------|----|-------|----------|----------|--------|
   1  20.010 BB    0.7932   51.40913 9.60672e-1  63.7737
   2  24.018 BBA   0.9581   29.20273 4.55184e-1  36.2263
```
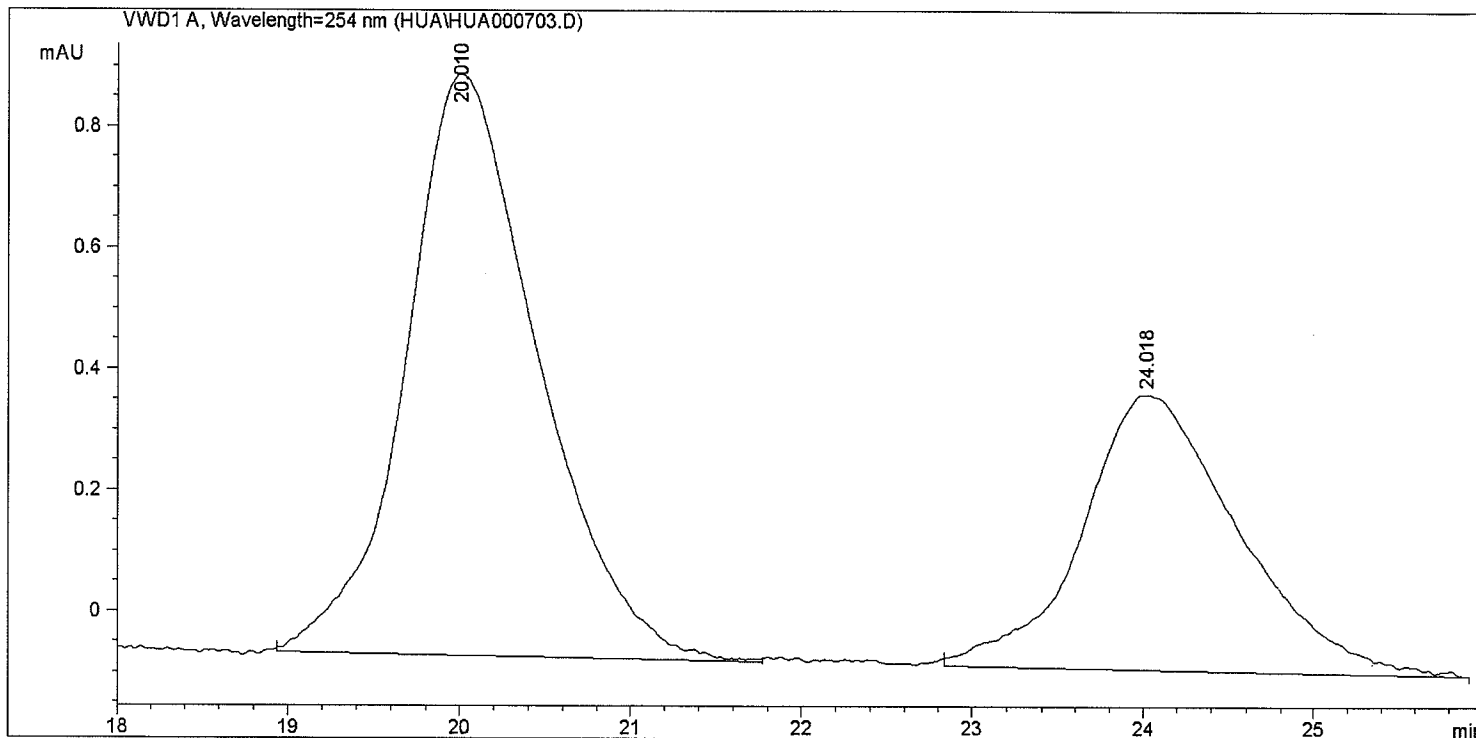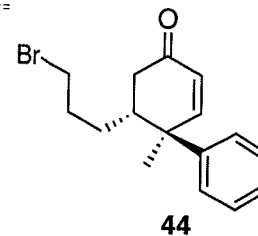
```
==================================================================== ---
Acq. Operator   : HUA                      Seq. Line :    1
Acq. Instrument : Instrument 1             Location : Vial
Injection Date  : 2/9/2010 4:42:57 PM            Inj :    1
                                          Inj Volume : 5 µl
Acq. Method     : C:\CHEM32\1\METHODS\HUA.M
Last changed    : 2/9/2010 4:40:50 PM by HUA
Analysis Method : C:\CHEM32\1\METHODS\HUA.M
Last changed    : 3/15/2010 7:46:48 PM by CHAO
                  (modified after loading)
Method Info     : ADanalytical column, 1.0 mL/min, 254 nm, IPA:HEX10:90
```

(mixture)

45

VWD1 A, Wavelength=254 nm (HUA\HUA000686.D)
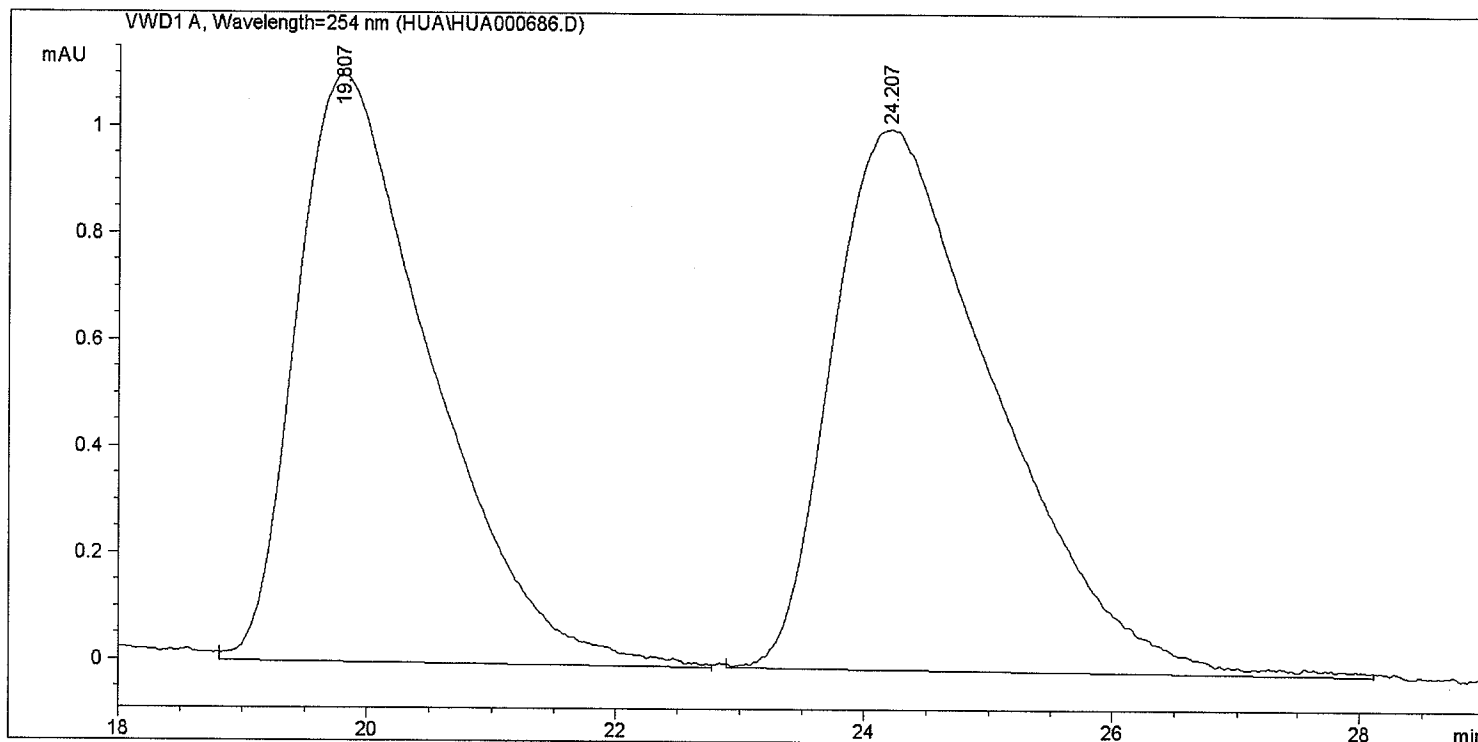
```
====================================================================
                        Fraction Information
====================================================================
Fraction collection off
====================================================================
No Fractions found.
====================================================================
====================================================================
                        Area Percent Report
====================================================================

Sorted By          :       Signal
Multiplier         :       1.0000
Dilution           :       1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: VWD1 A, Wavelength=254 nm

Peak RetTime Type  Width      Area       Height      Area
 #   [min]        [min]   mAU   *s    [mAU   ]       %
----|-------|----|-------|----------|----------|--------|
  1  19.807 VB   1.0913    83.10751    1.09980  47.0590
  2  24.207 BB   1.3718    93.49527    1.01491  52.9410
```
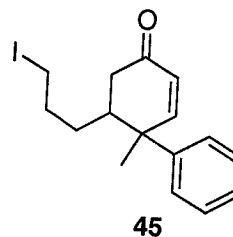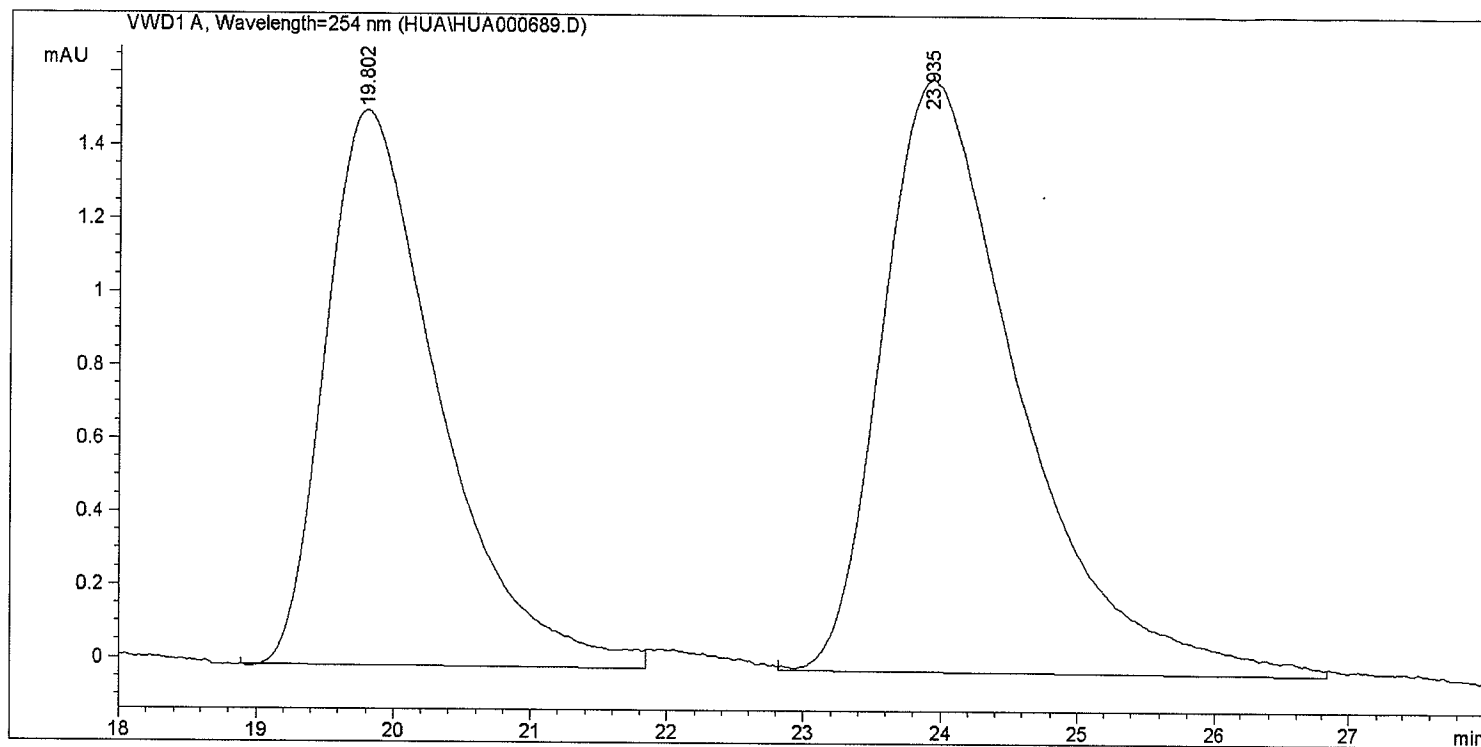
Data File C:\CHEM32\1\DATA\HUA\HUA000689.D
Sample Name: 15-32

```
==================================================================
```
Acq. Operator   : HUA   Seq. Line :   1
Acq. Instrument : Instrument 1   Location : Vial 1
Injection Date   : 2/10/2010 10:56:05 AM   Inj :   1
                                     Inj Volume : 5 µl

Acq. Method   : C:\CHEM32\1\METHODS\HUA.M
Last changed   : 2/10/2010 10:16:26 AM by HUA
Analysis Method : C:\CHEM32\1\METHODS\HUA.M
Last changed   : 3/15/2010 7:47:55 PM by CHAO
                   (modified after loading)
Method Info   : ADanalytical column, 1.0 mL/min, 254 nm, IPA:HEX10:90

45


```
==================================================================
                       Fraction Information
==================================================================
Fraction collection off
==================================================================
No Fractions found.
==================================================================
==================================================================
                       Area Percent Report
==================================================================
```

Sorted By   :   Signal
Multiplier   :   1.0000
Dilution   :   1.0000
Use Multiplier & Dilution Factor with ISTDs
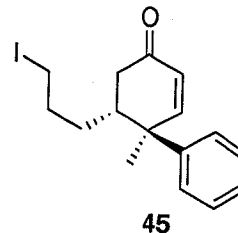

Signal 1: VWD1 A, Wavelength=254 nm

```
Peak RetTime Type  Width     Area       Height     Area
  #   [min]        [min]    mAU   *s    [mAU   ]      %
----|-------|----|-------|----------|----------|--------|
   1  19.802 BB   0.8494   86.94116    1.51655  43.3616
   2  23.935 BB   1.0397  113.56128    1.61898  56.6384
```

Data File C:\CHEM32\1\DATA\HUA\HUA000726.D
Sample Name: 15-2mix

```
==================================================================
Acq. Operator   : HUA                     Seq. Line :    1
Acq. Instrument : Instrument 1            Location : Vial
Injection Date  : 3/3/2010 4:38:05 PM          Inj :    1
                                        Inj Volume : 5 µl
Acq. Method     : C:\CHEM32\1\METHODS\HUA.M
Last changed    : 3/3/2010 3:48:56 PM by HUA
Analysis Method : C:\CHEM32\1\METHODS\HUA.M
Last changed    : 3/15/2010 7:51:01 PM by CHAO
                  (modified after loading)
Method Info     : ADanalytical column, 1.0 mL/min, 254 nm, IPA:HEX10:90
```
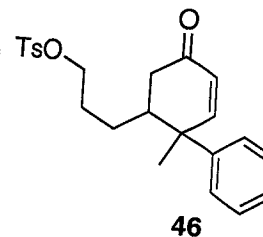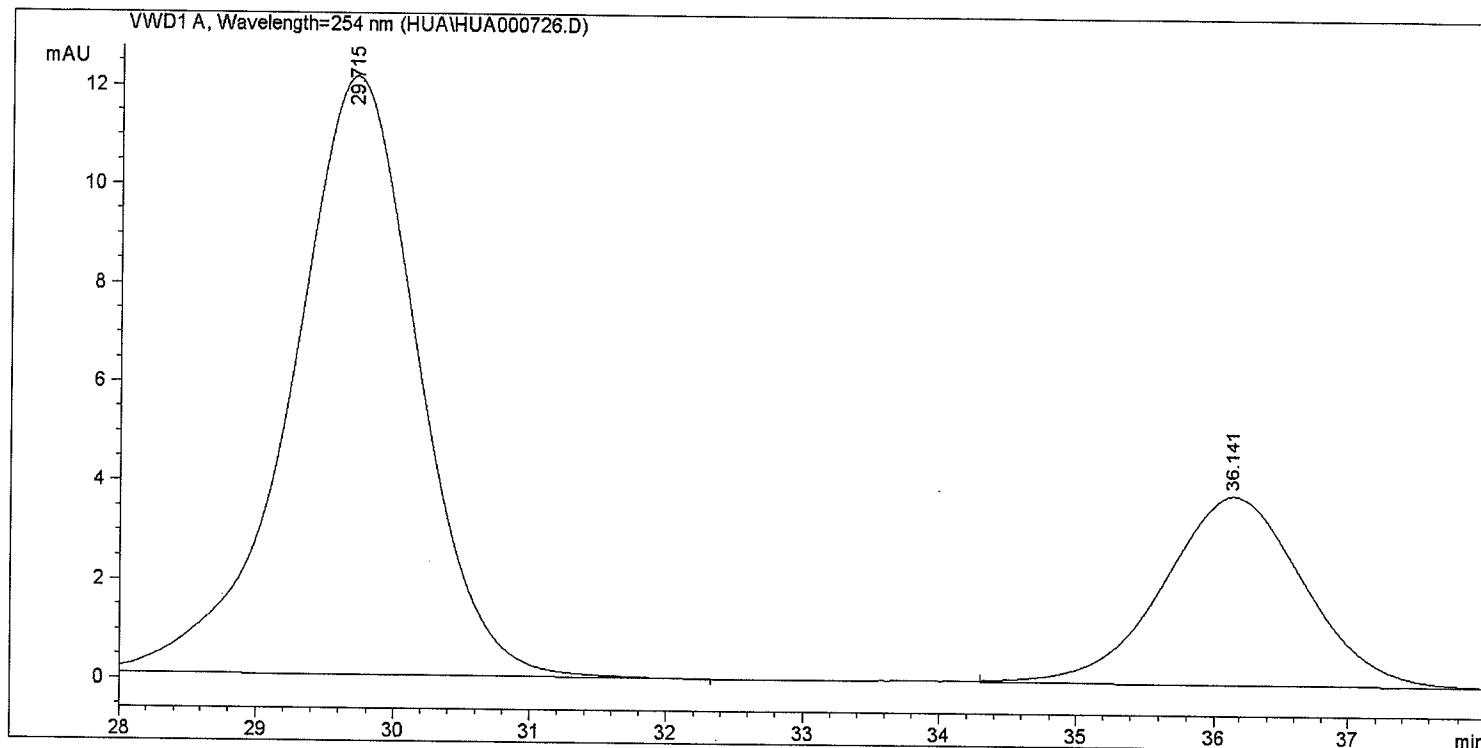


```
==================================================================
                      Fraction Information
==================================================================
Fraction collection off
==================================================================
No Fractions found.
==================================================================
==================================================================
                      Area Percent Report
==================================================================

Sorted By            :       Signal
Multiplier           :       1.0000
Dilution             :       1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: VWD1 A, Wavelength=254 nm

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   mAU   *s   [mAU   ]     %
----|-------|----|-------|----------|----------|--------|
  1  29.715  VB   0.9738  774.17865   12.09683  73.6946
  2  36.141  BB   1.1255  276.34467    3.81127  26.3054
```

Data File C:\CHEM32\1\DATA\HUA\HUA000730.D
 Sample Name: 15-71

===
Acq. Operator   : HUA   Seq. Line :   1
Acq. Instrument : Instrument 1   Location : Vial 1
Injection Date : 3/3/2010 8:59:04 PM   Inj :   1
                                             Inj Volume : 5 µl
Acq. Method   : C:\CHEM32\1\METHODS\HUA.M
Last changed   : 3/3/2010 3:48:56 PM by HUA
Analysis Method : C:\CHEM32\1\METHODS\HUA.M
Last changed   : 3/15/2010 7:48:57 PM by CHAO
                  (modified after loading)
Method Info   : ADanalytical column, 1.0 mL/min, 254 nm, IPA:HEX10:90

46

VWD1 A, Wavelength=254 nm (HUA\HUA000730.D)

===
                          Fraction Information
===
Fraction collection off
===
No Fractions found.
===
===
                          Area Percent Report
===
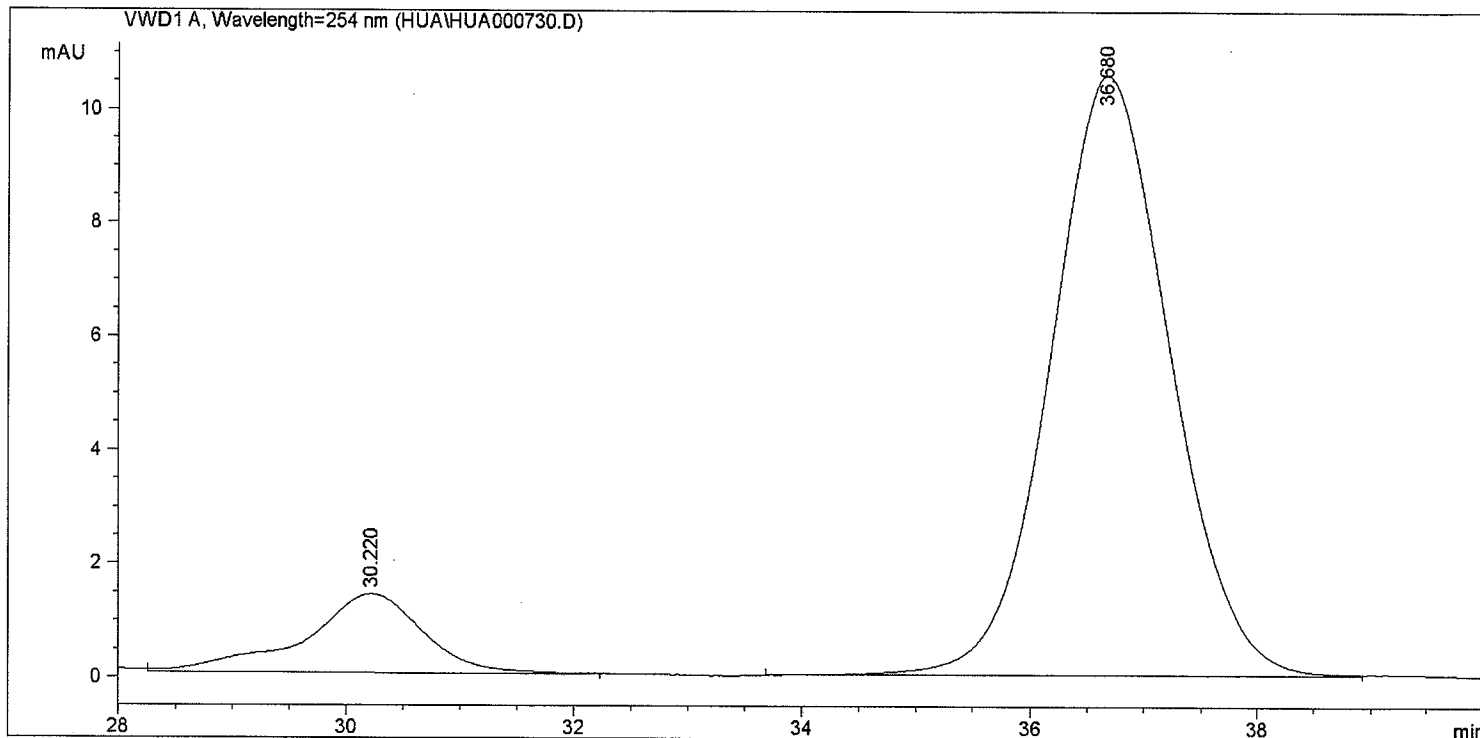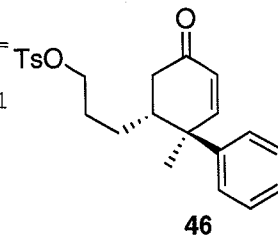
Sorted By   :   Signal
Multiplier   :   1.0000
Dilution   :   1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: VWD1 A, Wavelength=254 nm

Peak RetTime Type Width   Area   Height   Area
  #   [min]   [min]   mAU   *s   [mAU   ]   %
----|-------|----|-------|----------|----------|--------|
  1 30.220 VB   1.0701   102.06100   1.39324 11.7063
  2 36.680 BB   1.1234   769.78766   10.56936 88.2937

Data File C:\CHEM32\1\DATA\HUA\HUA000666.D
Sample Name: 15-50mix

```
==================================================================:
```
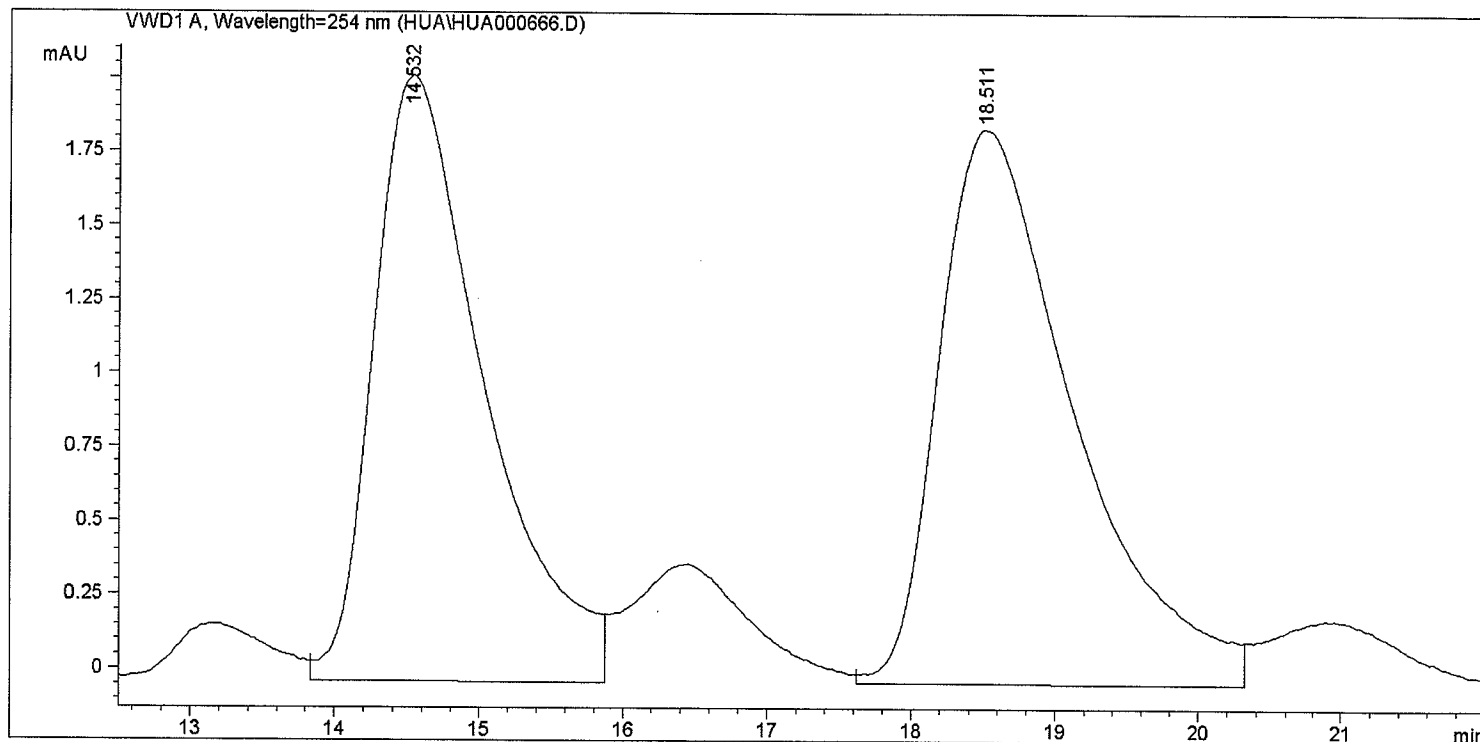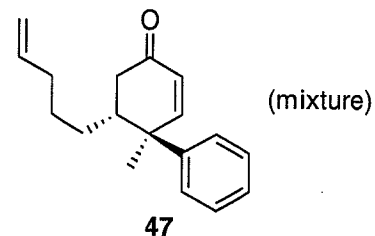Acq. Operator   : HUA   Seq. Line :   1
Acq. Instrument : Instrument 1   Location : Vial
Injection Date   : 2/8/2010 11:18:58 AM   Inj :   1
                                             Inj Volume : 5 µl
Acq. Method   : C:\CHEM32\1\METHODS\HUA.M
Last changed   : 2/8/2010 11:16:50 AM by HUA
Analysis Method : C:\CHEM32\1\METHODS\HUA.M
Last changed   : 3/15/2010 7:51:14 PM by CHAO
                   (modified after loading)
Method Info   : ADanalytical column, 1.0 mL/min, 254 nm, IPA:HEX10:90

47   (mixture)


```
==================================================================
                      Fraction Information
==================================================================
Fraction collection off
==================================================================
No Fractions found.
==================================================================
==================================================================
                     Area Percent Report
==================================================================
```

Sorted By   :   Signal
Multiplier   :   1.0000
Dilution   :   1.0000
Use Multiplier & Dilution Factor with ISTDs
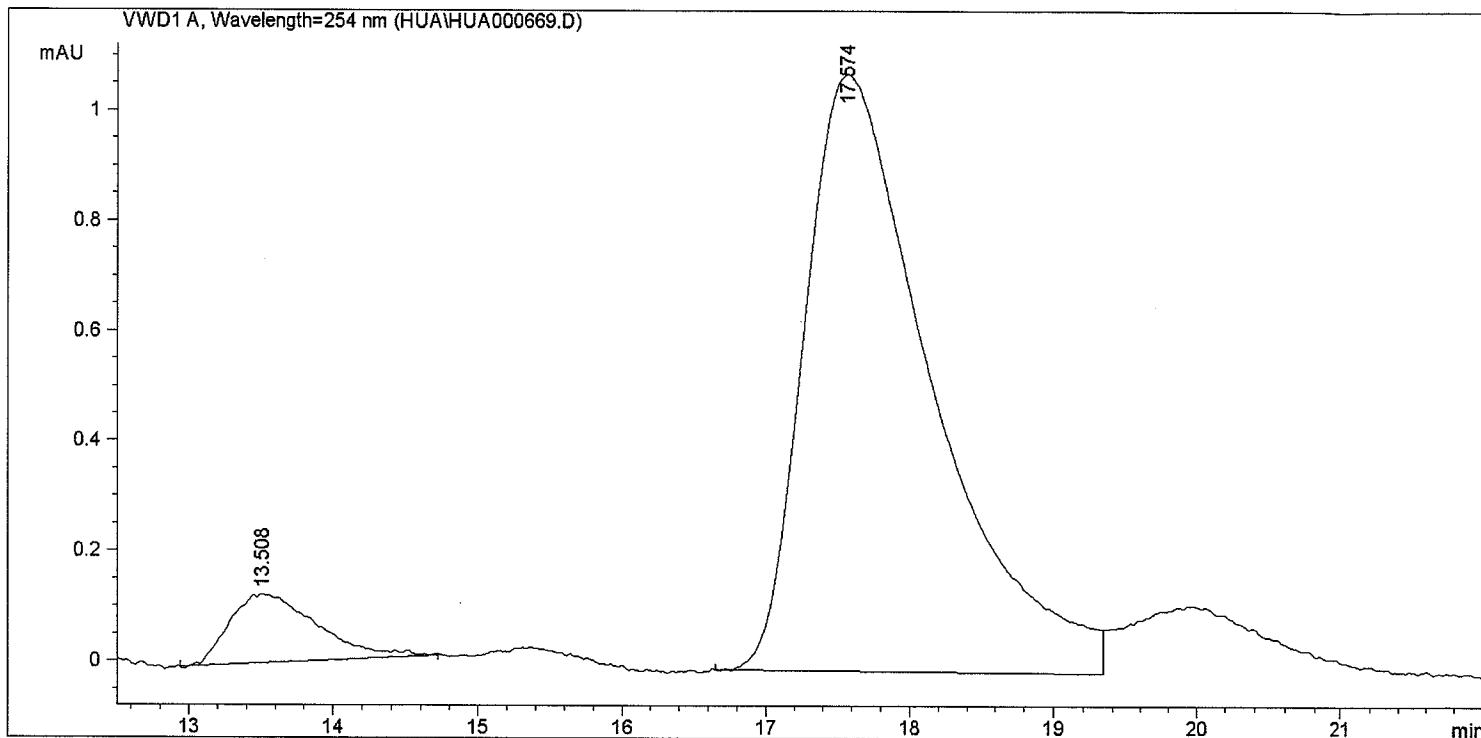

Signal 1: VWD1 A, Wavelength=254 nm

```
Peak RetTime Type  Width     Area        Height     Area
  #   [min]        [min]   mAU   *s     [mAU   ]       %
----|-------|----|-------|----------|----------|--------|
   1  14.532 VV   0.7905  109.30397    2.05138   47.1774
   2  18.511 VV   0.9761  122.38309    1.87725   52.8226
```

Instrument 1 3/15/2010 7:52:39 PM CHAO   S112   Page   1 of 2

Data File C:\CHEM32\1\DATA\HUA\HUA000669.D
 Sample Name: 15-51

```
================================================================
 Acq. Operator   : HUA                      Seq. Line :   1
 Acq. Instrument : Instrument 1              Location : Vial 1
 Injection Date  : 2/8/2010 12:22:23 PM          Inj :   1
                                          Inj Volume : 5 µl
 Acq. Method     : C:\CHEM32\1\METHODS\HUA.M
 Last changed    : 2/8/2010 11:16:50 AM by HUA
 Analysis Method : C:\CHEM32\1\METHODS\HUA.M
 Last changed    : 3/15/2010 7:52:39 PM by CHAO
                   (modified after loading)
 Method Info     : ADanalytical column, 1.0 mL/min, 254 nm, IPA:HEX10:90
```


47

VWD1 A, Wavelength=254 nm (HUA\HUA000669.D)

```
================================================================
                    Fraction Information
================================================================
Fraction collection off
================================================================
No Fractions found.
================================================================

================================================================
                    Area Percent Report
================================================================

Sorted By          :      Signal
Multiplier         :      1.0000
Dilution           :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: VWD1 A, Wavelength=254 nm

Peak RetTime Type  Width     Area      Height      Area
  #   [min]        [min]   mAU  *s    [mAU  ]       %
----|-------|----|-------|----------|----------|--------|
  1  13.508 BB   0.6230    5.34407 1.25995e-1   7.4450
  2  17.574 BV   0.8906   66.43693    1.08276   92.5550
```
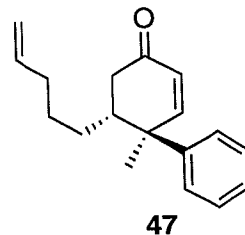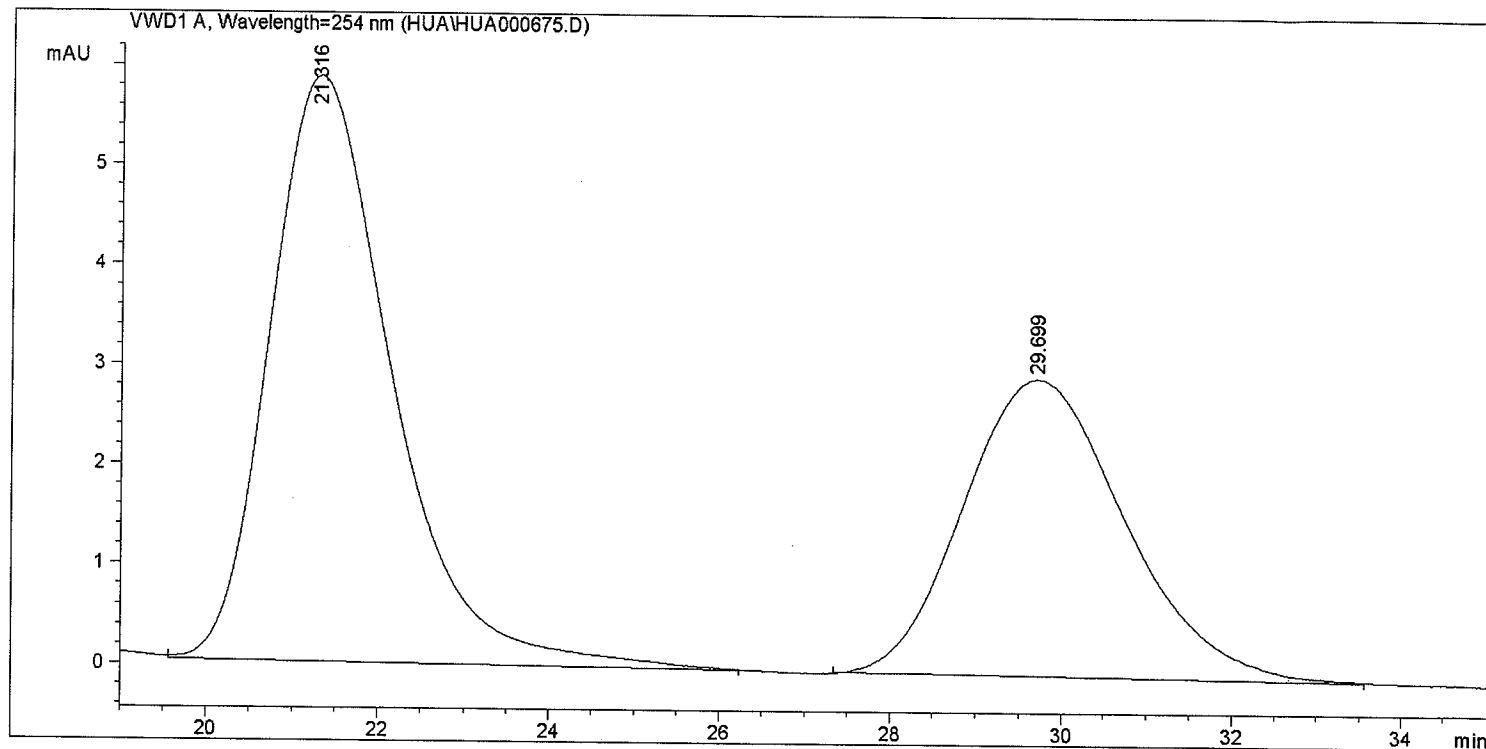
Data File C:\CHEM32\1\DATA\HUA\HUA000675.D
Sample Name: 15-48mix

==

Acq. Operator   : HUA   Seq. Line :   1
Acq. Instrument : Instrument 1   Location : Vial 1
Injection Date : 2/8/2010 9:46:38 PM   Inj :   1
                                          Inj Volume : 5 µl
Acq. Method   : C:\CHEM32\1\METHODS\HUA.M
Last changed   : 2/8/2010 9:44:30 PM by HUA
Analysis Method : C:\CHEM32\1\METHODS\HUA.M
Last changed   : 3/15/2010 7:53:26 PM by CHAO
                  (modified after loading)
Method Info   : ADanalytical column, 1.0 mL/min, 254 nm, IPA:HEX:

(mixture)

53

VWD1 A, Wavelength=254 nm (HUA\HUA000675.D)

==
                        Fraction Information
==
Fraction collection off
==
No Fractions found.
==

==
                       Area Percent Report
==
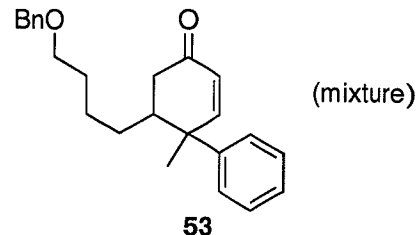
Sorted By   :   Signal
Multiplier   :   1.0000
Dilution   :   1.0000
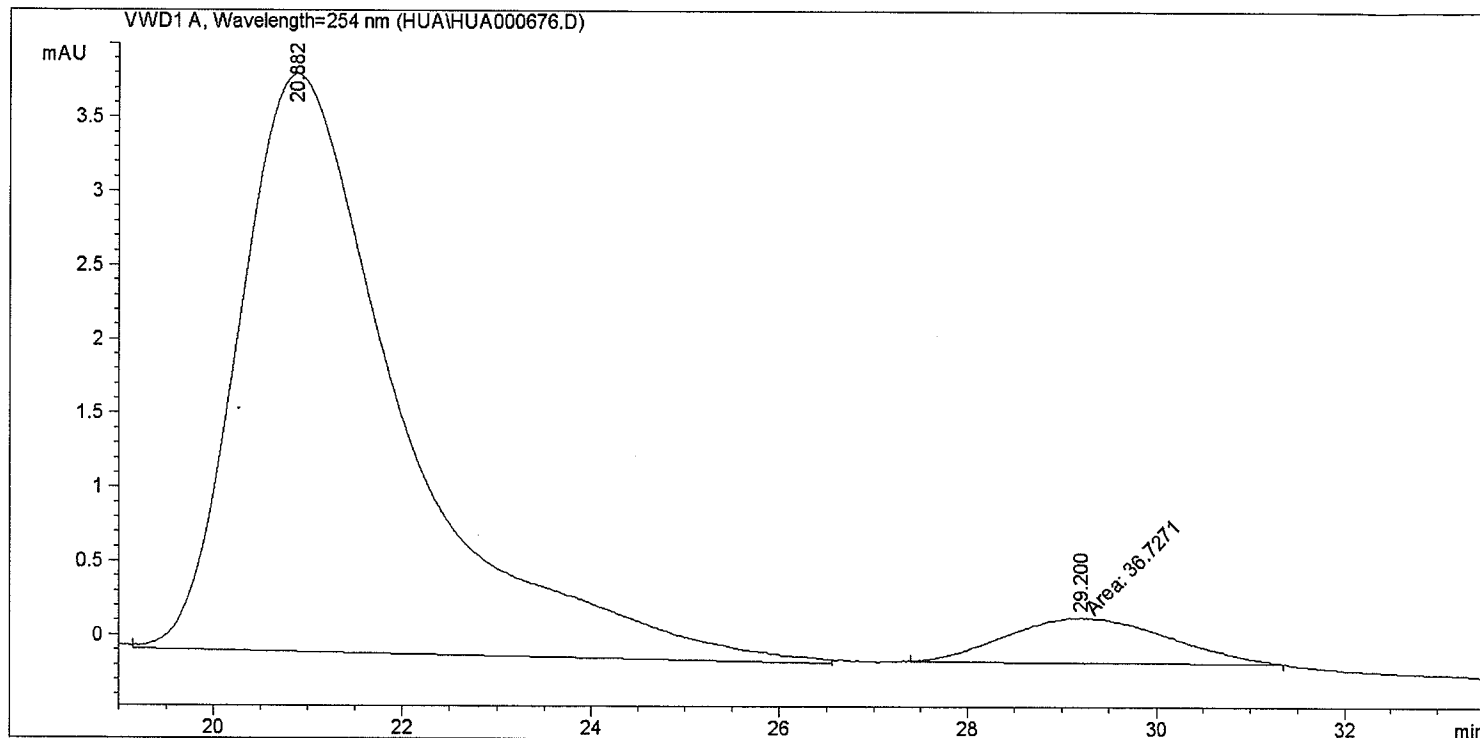Use Multiplier & Dilution Factor with ISTDs

Signal 1: VWD1 A, Wavelength=254 nm

Peak #	RetTime [min]	Type	Width [min]	Area mAU *s	Height [mAU]	Area %
1	21.316	VB	1.5305	580.10803	5.87534	59.7053
2	29.699	BB	2.0112	391.51157	2.97824	40.2947

```
Data File C:\CHEM32\1\DATA\HUA\HUA000676.D
 Sample Name: 15-48

 =====================================================================
 Acq. Operator   : HUA                        Seq. Line :   1
 Acq. Instrument : Instrument 1                 Location : Vial 1
 Injection Date  : 2/9/2010 10:04:45 AM              Inj :   1
                                          Inj Volume : 5 µl
 Acq. Method     : C:\CHEM32\1\METHODS\HUA.M
 Last changed    : 2/9/2010 10:02:47 AM by HUA
 Analysis Method : C:\CHEM32\1\METHODS\HUA.M
 Last changed    : 3/15/2010 7:56:20 PM by CHAO
                   (modified after loading)
 Method Info     : ADanalytical column, 1.0 mL/min, 254 nm, IPA:HEX10:90
```



```
 =====================================================================
                        Fraction Information
 =====================================================================
 Fraction collection off
 =====================================================================
 No Fractions found.
 =====================================================================
 =====================================================================
                        Area Percent Report
 =====================================================================

 Sorted By          :      Signal
 Multiplier         :      1.0000
 Dilution           :      1.0000
 Use Multiplier & Dilution Factor with ISTDs


 Signal 1: VWD1 A, Wavelength=254 nm

 Peak RetTime Type  Width     Area       Height     Area
  #   [min]        [min]   mAU   *s   [mAU   ]       %
 ----|-------|----|-------|----------|----------|--------|
    1  20.882 VB   1.7658   464.76355    3.90874   92.6764
    2  29.200 MM   1.9998    36.72712 3.06085e-1    7.3236
```
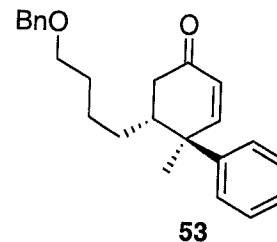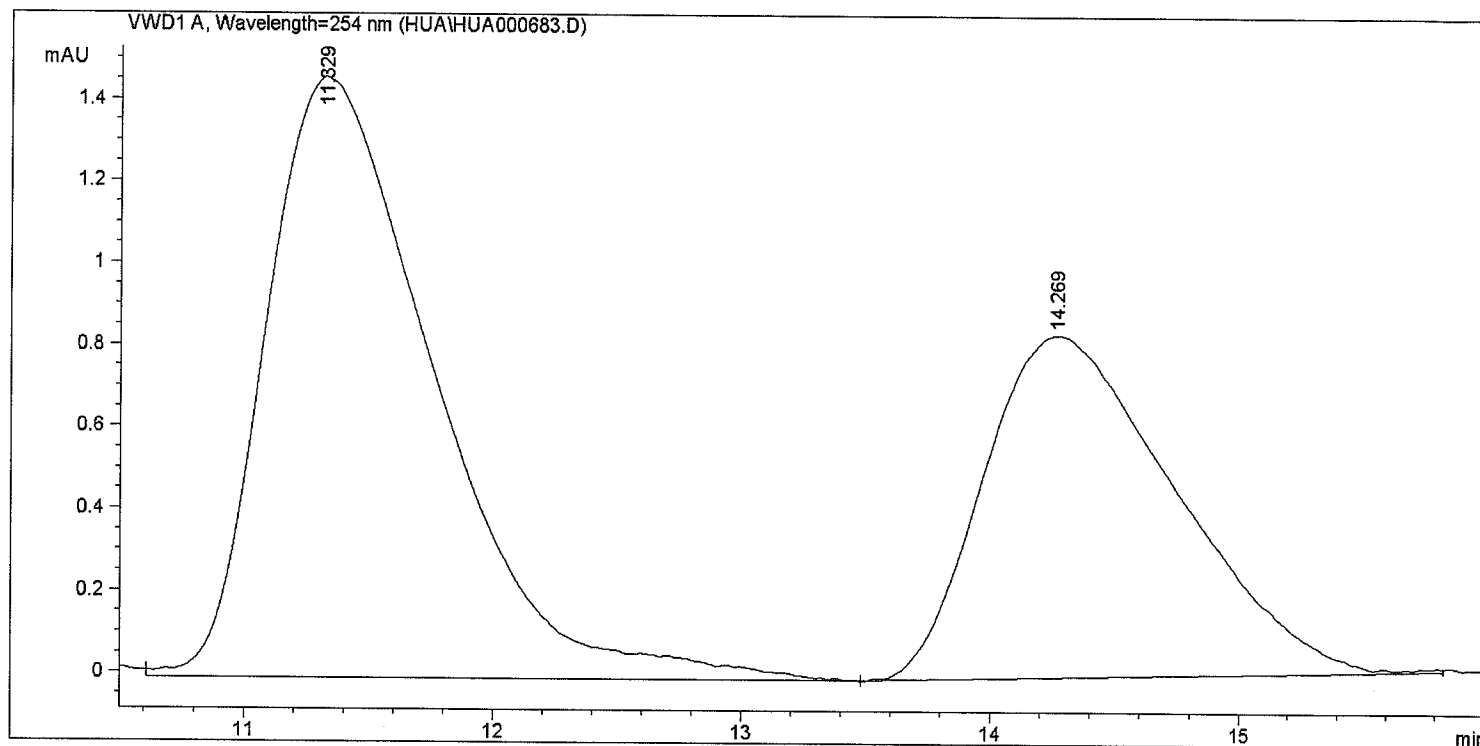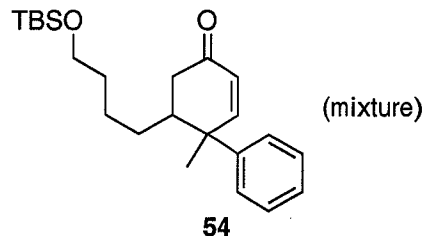
Data File C:\CHEM32\1\DATA\HUA\HUA000683.D
Sample Name: 15-39mix

==

Acq. Operator   : HUA   Seq. Line :   1
Acq. Instrument : Instrument 1   Location : Via
Injection Date : 2/9/2010 4:08:03 PM   Inj :   1
                                              Inj Volume : 5 µ

Acq. Method   : C:\CHEM32\1\METHODS\HUA.M
Last changed   : 2/9/2010 2:40:10 PM by HUA
Analysis Method : C:\CHEM32\1\METHODS\HUA.M
Last changed   : 3/15/2010 7:58:22 PM by CHAO
                  (modified after loading)
Method Info   : ADanalytical column, 1.0 mL/min, 254 nm, IPA:H

(mixture)

54

==
                      Fraction Information
==
Fraction collection off

No Fractions found.
==

==
                      Area Percent Report
==

Sorted By   :   Signal
Multiplier   :   1.0000
Dilution   :   1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: VWD1 A, Wavelength=254 nm

Peak RetTime Type Width   Area   Height   Area
  #   [min]   [min]   mAU   *s   [mAU   ]   %
----|-------|----|-------|----------|----------|--------|
  1 11.329 VB   0.7117   68.98110   1.46703   60.6542
  2 14.269 BB   0.8117   44.74733 8.34853e-1 39.3458

Data File C:\CHEM32\1\DATA\HUA\HUA000680.D
Sample Name: 15-39

```
=====================================================================
```
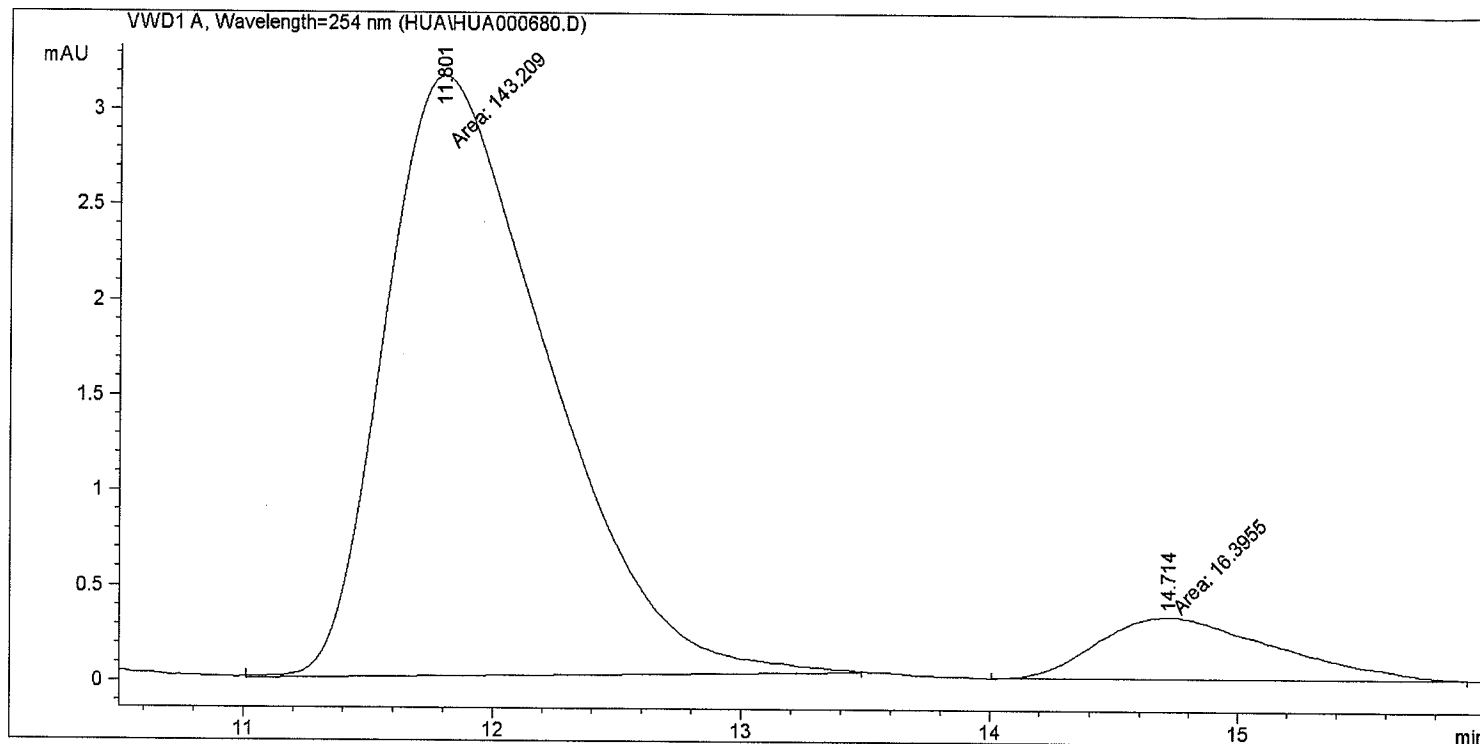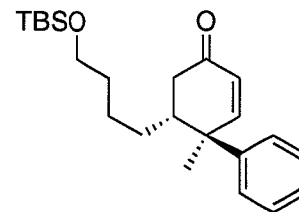Acq. Operator   : HUA   Seq. Line :   1
Acq. Instrument : Instrument 1   Location : Vial 1
Injection Date : 2/9/2010 3:46:24 PM   Inj :   1
                                           Inj Volume : 5 µl

Acq. Method   : C:\CHEM32\1\METHODS\HUA.M
Last changed   : 2/9/2010 2:40:10 PM by HUA
Analysis Method : C:\CHEM32\1\METHODS\HUA.M
Last changed   : 3/15/2010 8:00:49 PM by CHAO
                  (modified after loading)
Method Info   : ADanalytical column, 1.0 mL/min, 254 nm, IPA:HEX10:9(

54


```
=====================================================================
                       Fraction Information
=====================================================================
Fraction collection off
=====================================================================
No Fractions found.
=====================================================================
=====================================================================
                       Area Percent Report
=====================================================================
```

Sorted By   :   Signal
Multiplier   :   1.0000
Dilution   :   1.0000
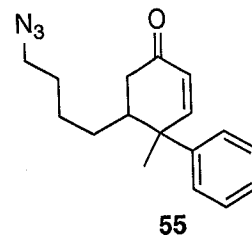Use Multiplier & Dilution Factor with ISTDs

Signal 1: VWD1 A, Wavelength=254 nm

```
Peak RetTime Type  Width     Area      Height      Area
 #   [min]        [min]   mAU   *s   [mAU   ]       %
----|-------|----|-------|----------|----------|--------|
  1  11.801 MM   0.7571  143.20897    3.15259   89.7274
  2  14.714 MM   0.8387   16.39554  3.25827e-1  10.2726
```

Data File C:\CHEM32\1\DATA\HUA\HUA000693.D
Sample Name: 15-55mix

```
===============================================================
Acq. Operator   : HUA                      Seq. Line :    1
Acq. Instrument : Instrument 1             Location : Vial 1
Injection Date  : 2/14/2010 3:46:34 PM          Inj :    1
                                          Inj Volume : 5 µl
Acq. Method     : C:\CHEM32\1\METHODS\HUA.M
Last changed    : 2/14/2010 3:44:40 PM by HUA
Analysis Method : C:\CHEM32\1\METHODS\HUA.M
Last changed    : 3/15/2010 8:03:44 PM by CHAO
                  (modified after loading)
Method Info     : ADanalytical column, 1.0 mL/min, 254 nm, IPA:HEX10:90
```
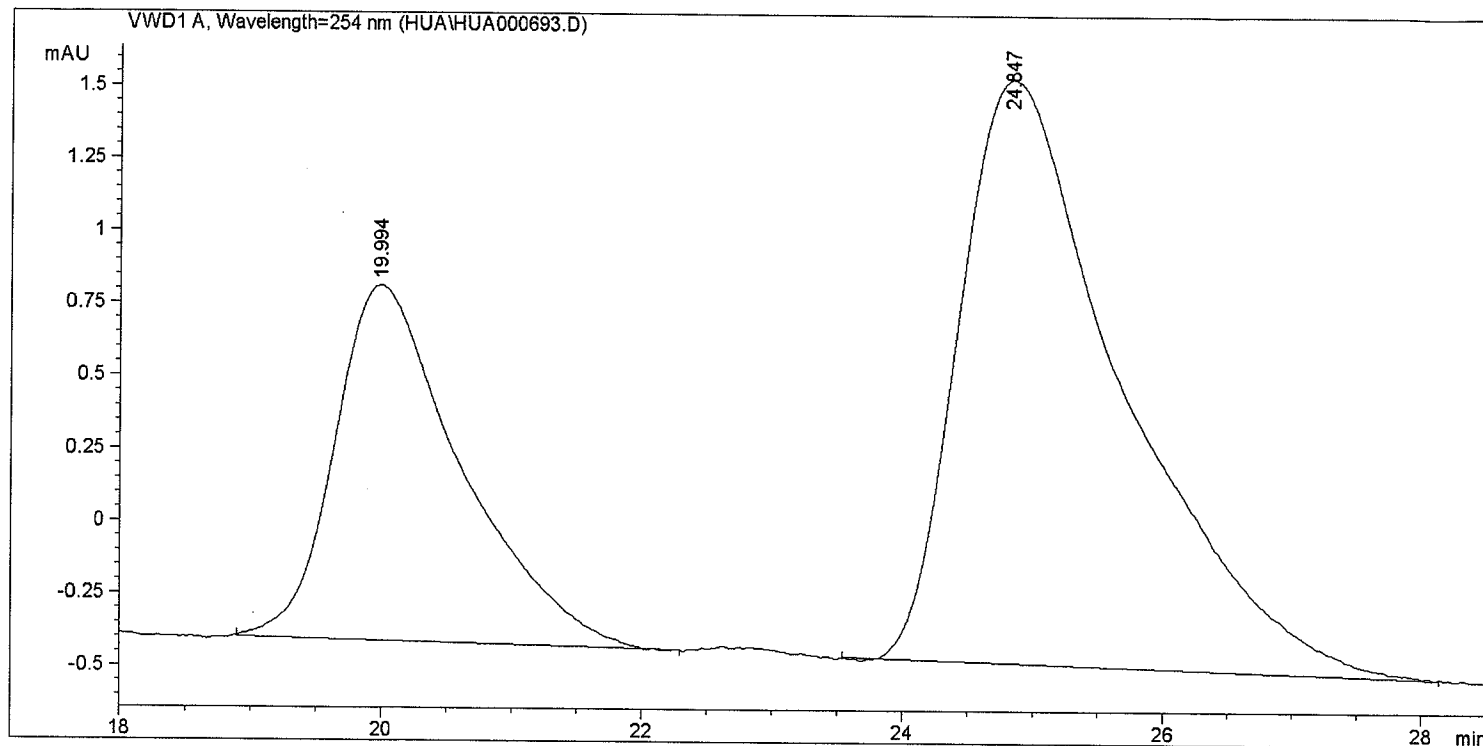


```
===============================================================
                    Fraction Information
===============================================================
Fraction collection off
===============================================================
No Fractions found.
===============================================================
===============================================================
                    Area Percent Report
===============================================================

Sorted By            :       Signal
Multiplier           :       1.0000
Dilution             :       1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: VWD1 A, Wavelength=254 nm

Peak RetTime Type  Width     Area        Height     Area
  #   [min]        [min]   mAU   *s     [mAU   ]     %
----|-------|----|-------|----------|----------|--------|
  1  19.994 BB   0.9653   82.66781    1.22892   31.9125
  2  24.847 BB   1.2762  176.37718    2.01744   68.0875
```
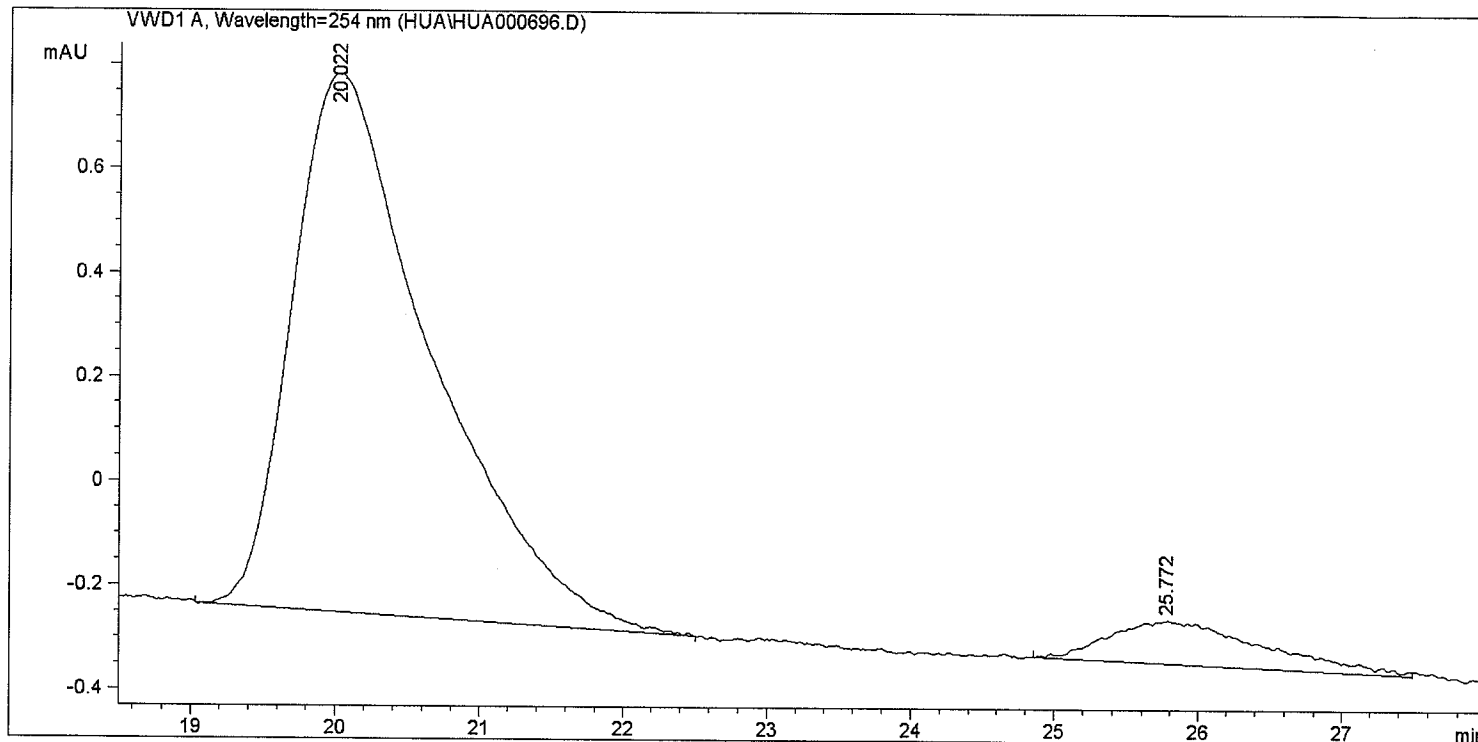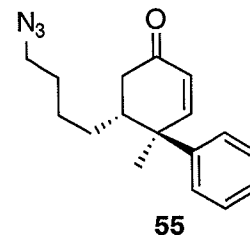
Instrument 1 3/15/2010 8:03:57 PM CHAO   S118   Page   1 of 2

Data File C:\CHEM32\1\DATA\HUA\HUA000696.D
Sample Name: 15-55

==
Acq. Operator   : HUA   Seq. Line :   1
Acq. Instrument : Instrument 1   Location : Vial 1
Injection Date : 2/14/2010 4:23:38 PM   Inj :   1
                                               Inj Volume : 5 µl
Acq. Method   : C:\CHEM32\1\METHODS\HUA.M
Last changed   : 2/14/2010 3:44:40 PM by HUA
Analysis Method : C:\CHEM32\1\METHODS\HUA.M
Last changed   : 3/15/2010 8:03:57 PM by CHAO
                  (modified after loading)
Method Info   : ADanalytical column, 1.0 mL/min, 254 nm, IPA:HEX10:90

55

==
                          Fraction Information
==
Fraction collection off
==
No Fractions found.
==
==
                          Area Percent Report
==
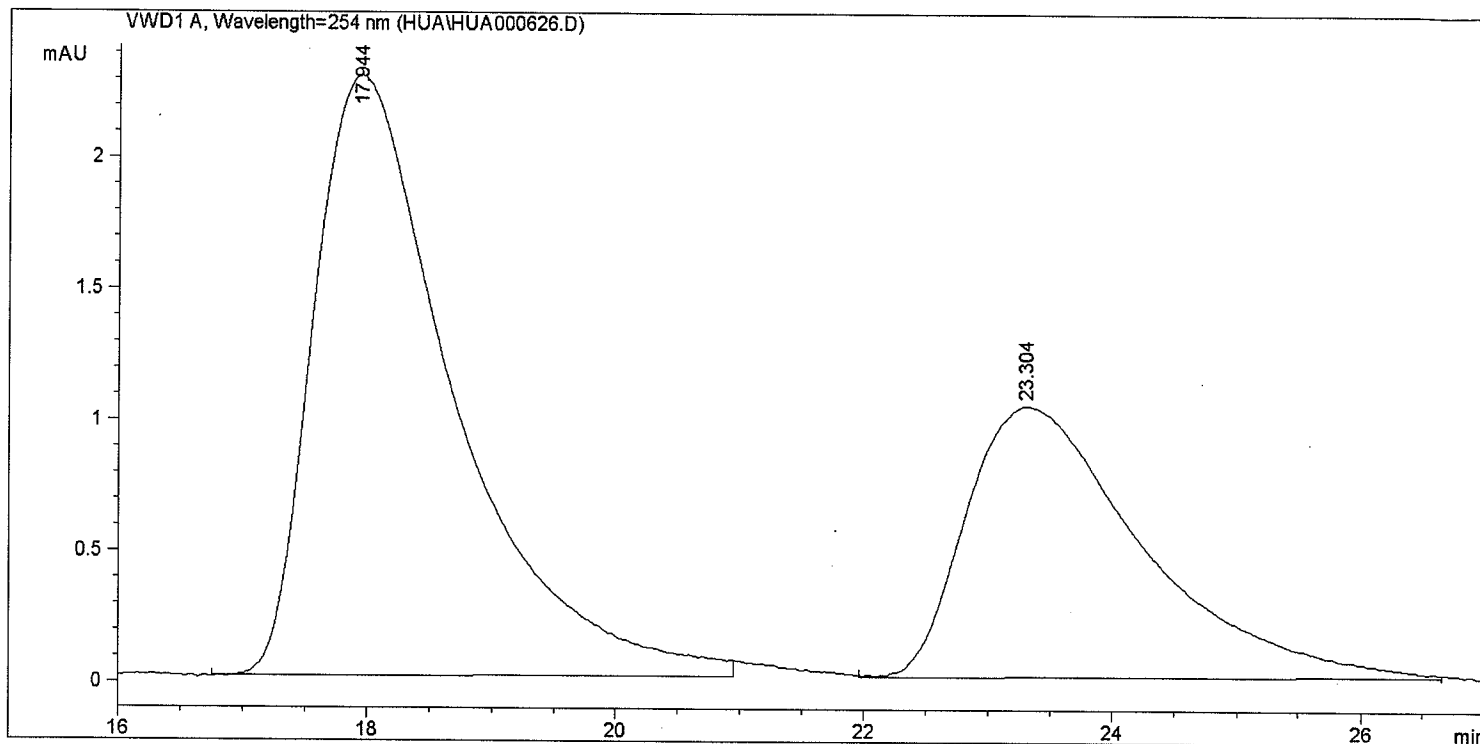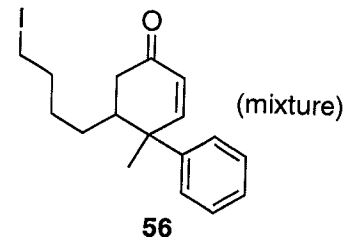
Sorted By   :   Signal
Multiplier   :   1.0000
Dilution   :   1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: VWD1 A, Wavelength=254 nm

Peak RetTime Type Width   Area   Height   Area
  #   [min]   [min]   mAU   *s   [mAU   ]   %
----|-------|----|-------|----------|----------|--------|
  1 20.022 BB   0.9779   69.17640   1.03490   91.4435
  2 25.772 BB   0.9416   6.47297 8.32908e-2   8.5565

Instrument 1 3/15/2010 8:05:19 PM CHAO   S119   Page   1 of 2

```
Data File C:\CHEM32\1\DATA\HUA\HUA000626.D
  Sample Name: 15-9
```

```
=========================================================
Acq. Operator   : HUA                    Seq. Line :   1
Acq. Instrument : Instrument 1            Location : Vial 1
Injection Date  : 1/26/2010 3:30:41 PM        Inj :   1
                                        Inj Volume : 5 µl
Acq. Method     : C:\CHEM32\1\METHODS\HUA.M
Last changed    : 1/26/2010 10:15:56 AM by HUA
Analysis Method : C:\CHEM32\1\METHODS\HUA.M
Last changed    : 3/15/2010 8:05:19 PM by CHAO
                  (modified after loading)
Method Info     : ADanalytical column, 1.0 mL/min, 254 nm, IPA:HEX10:90
```

(mixture)

56

VWD1 A, Wavelength=254 nm (HUA\HUA000626.D)

```
=========================================================================
                        Fraction Information
=========================================================================
Fraction collection off
=========================================================================
No Fractions found.
=========================================================================
=========================================================================
                        Area Percent Report
=========================================================================
```

```
Sorted By          :       Signal
Multiplier         :       1.0000
Dilution           :       1.0000
Use Multiplier & Dilution Factor with ISTDs
```
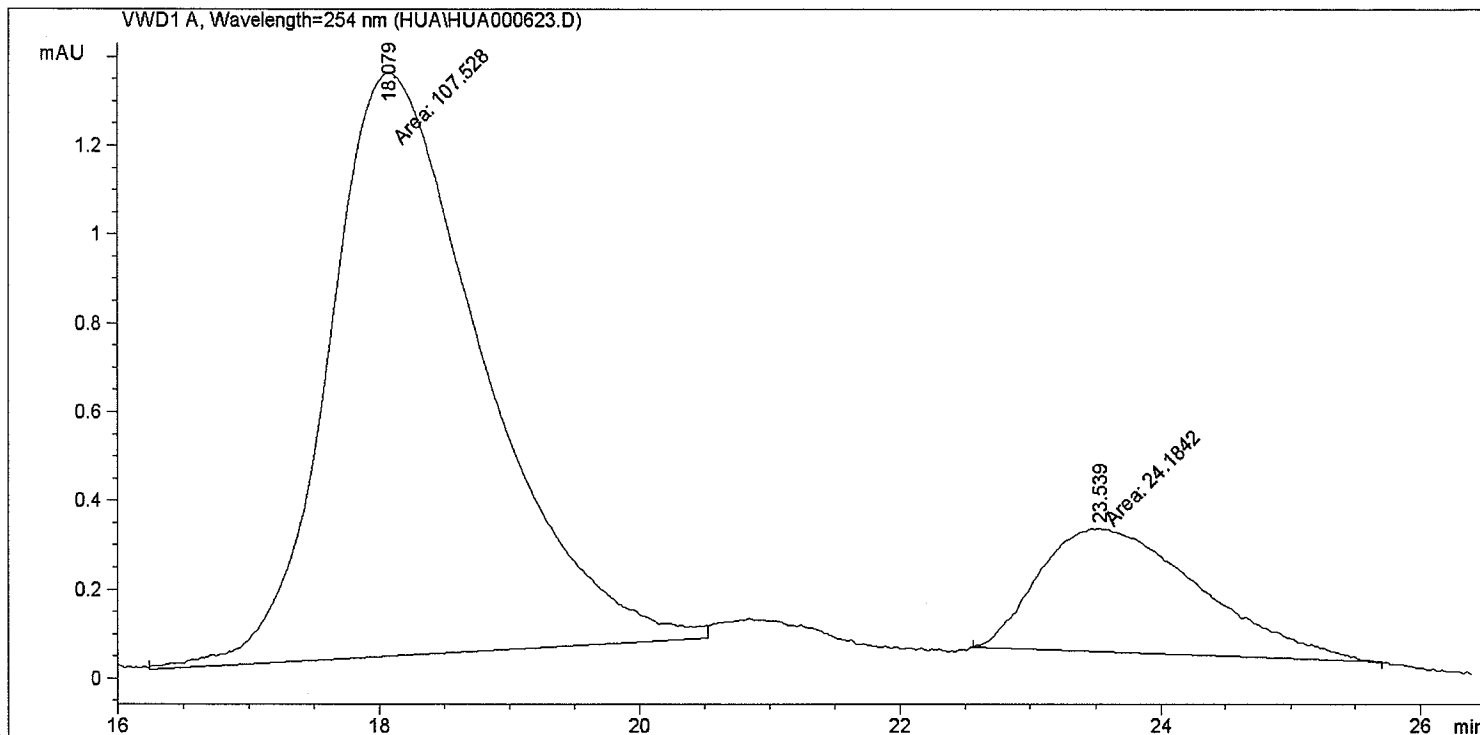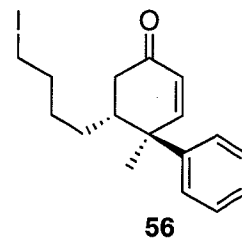
```
Signal 1: VWD1 A, Wavelength=254 nm

Peak RetTime Type  Width     Area      Height      Area
  #   [min]        [min]   mAU   *s   [mAU   ]       %
----|-------|----|-------|----------|----------|--------|
  1  17.944 BB   1.1702  180.53336    2.29001  63.8415
  2  23.304 BB   1.4738  102.25032    1.03419  36.1585
```

```
Data File C:\CHEM32\1\DATA\HUA\HUA000623.D
 Sample Name: 15-28
```

VWD1 A, Wavelength=254 nm (HUA\HUA000623.D)

```
=============================================================
                    Fraction Information
=============================================================
Fraction collection off
=============================================================
No Fractions found.
=============================================================
=============================================================
                    Area Percent Report
=============================================================

Sorted By            :        Signal
Multiplier           :        1.0000
Dilution             :        1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: VWD1 A, Wavelength=254 nm

Peak RetTime Type  Width     Area       Height      Area
  #   [min]        [min]   mAU   *s    [mAU   ]       %
----|-------|----|-------|----------|----------|--------|
   1  18.079 MM   1.3631  107.52780    1.31470   81.6386
   2  23.539 MM   1.4510   24.18416 2.77785e-1   18.3614
```

Data File C:\CHEM32\1\DATA\HUA\HUA000760.D
 Sample Name: 15-74mix

===
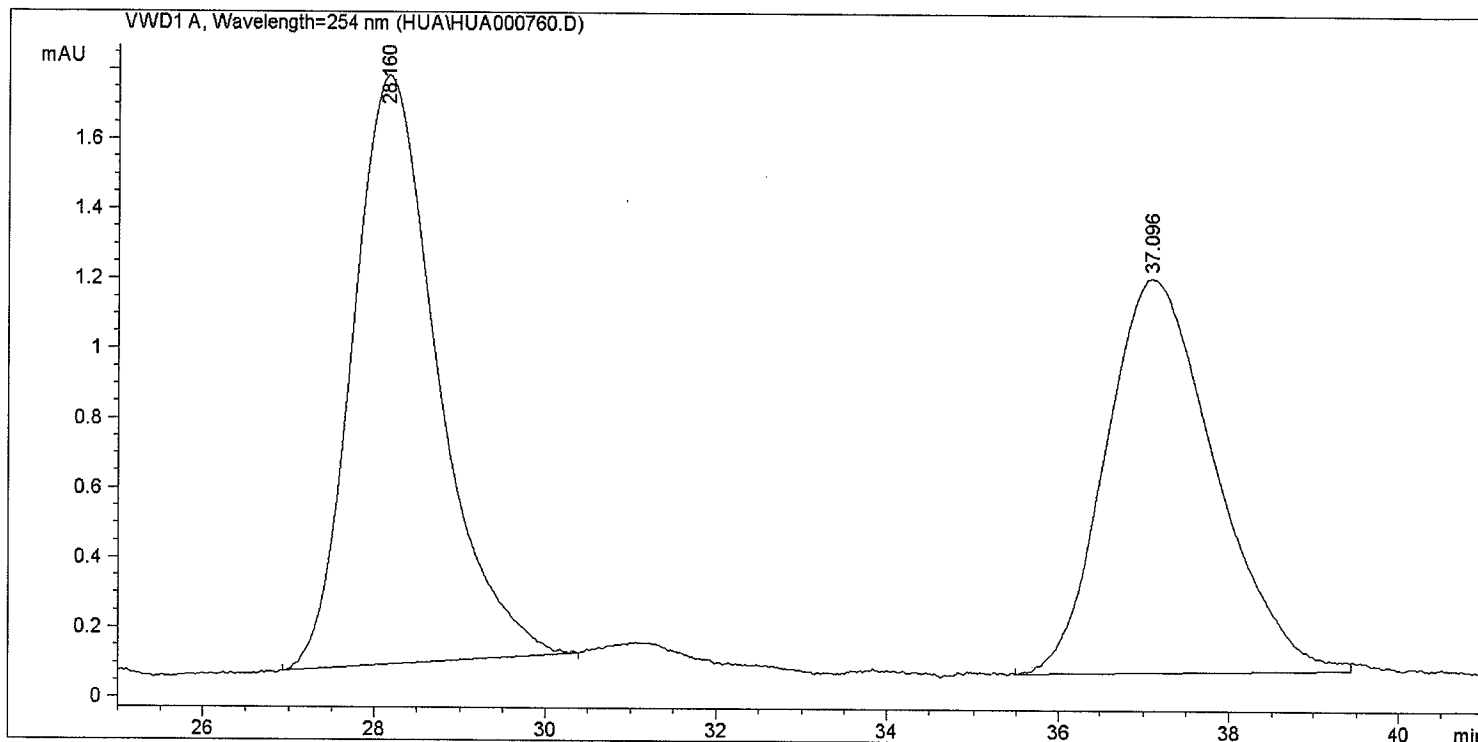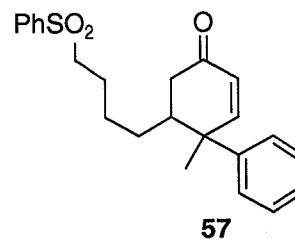Acq. Operator   : HUA   Seq. Line :   1
Acq. Instrument : Instrument 1   Location   : Via
Injection Date : 3/8/2010 3:19:33 PM   Inj :   1
                                          Inj Volume : 5 µ
Acq. Method   : C:\CHEM32\1\METHODS\HUA.M
Last changed   : 3/8/2010 12:58:14 PM by HUA
Analysis Method : C:\CHEM32\1\METHODS\HUA.M
Last changed   : 3/15/2010 8:11:31 PM by CHAO
                  (modified after loading)
Method Info   : ADanalytical column, 1.0 mL/min, 254 nm, IPA:HEXIU:90

===
                      Fraction Information
===
Fraction collection off
===
No Fractions found.
===
===
                     Area Percent Report
===

Sorted By   :   Signal
Multiplier   :   1.0000
Dilution   :   1.0000
Use Multiplier & Dilution Factor with ISTDs
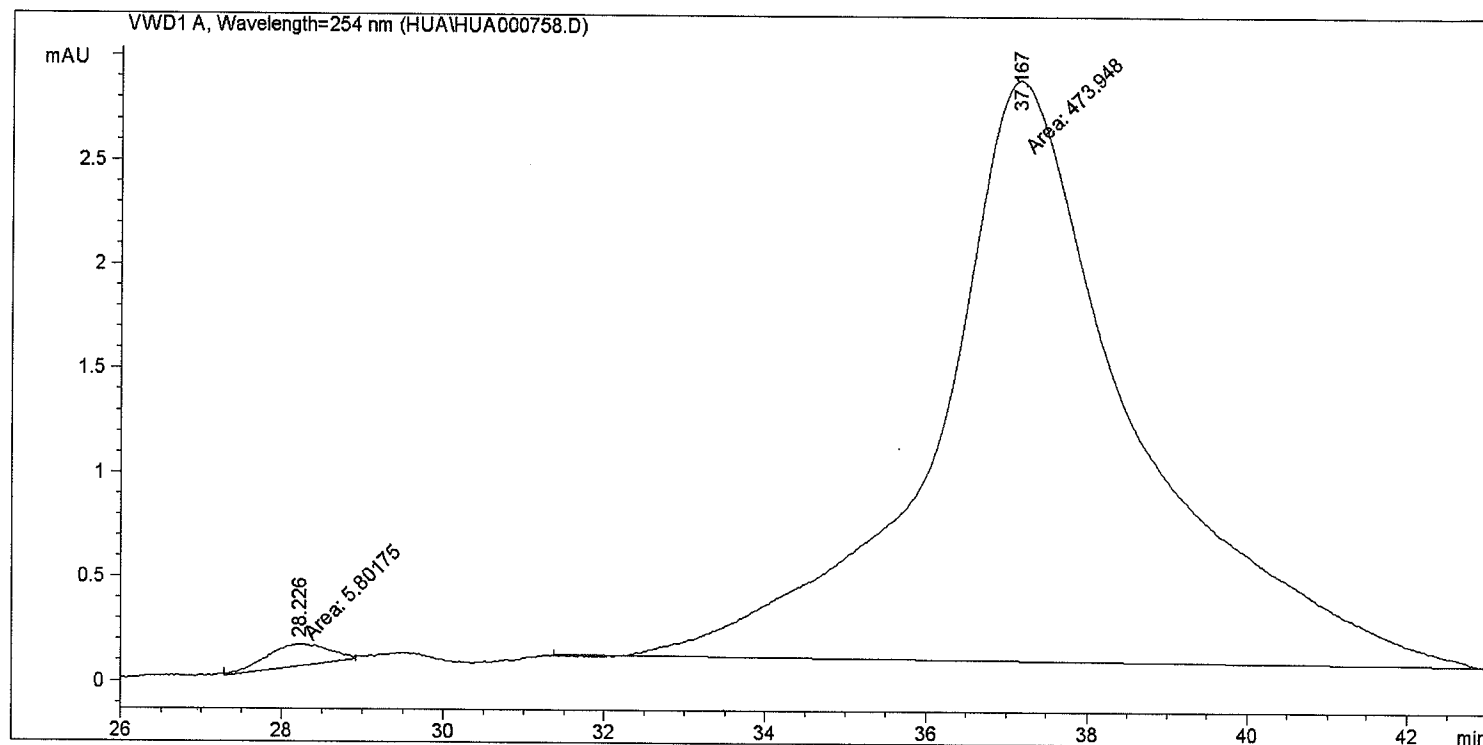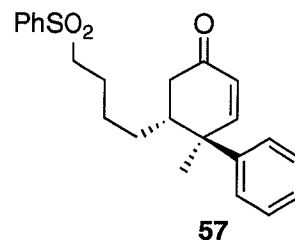

Signal 1: VWD1 A, Wavelength=254 nm

Peak RetTime Type Width   Area   Height   Area
  #   [min]   [min]   mAU   *s   [mAU   ]   %
----|-------|----|-------|----------|----------|--------|
   1 28.160 BB   1.0432 115.56551   1.68831 53.4490
   2 37.096 BB   1.3400 100.65092   1.13221 46.5510

Instrument 1 3/15/2010 8:11:36 PM CHAO   S122   Page   1 of 2

Data File C:\CHEM32\1\DATA\HUA\HUA000758.D
Sample Name: 15-74

```
==========================================================
Acq. Operator   : HUA                Seq. Line :    1
Acq. Instrument : Instrument 1        Location : Vial 1
Injection Date  : 3/8/2010 1:48:22 PM     Inj :    1
                                   Inj Volume : 5 µl
Acq. Method     : C:\CHEM32\1\METHODS\HUA.M
Last changed    : 3/8/2010 12:58:14 PM by HUA
Analysis Method : C:\CHEM32\1\METHODS\HUA.M
Last changed    : 3/15/2010 8:12:56 PM by CHAO
                  (modified after loading)
Method Info     : ADanalytical column, 1.0 mL/min, 254 nm, IPA:HEX10:9
```


57


```
==========================================================
                  Fraction Information
==========================================================
Fraction collection off
==========================================================
No Fractions found.
==========================================================
==========================================================
                  Area Percent Report
==========================================================


Sorted By           :      Signal
Multiplier          :      1.0000
Dilution            :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: VWD1 A, Wavelength=254 nm

Peak RetTime Type  Width     Area       Height      Area
  #   [min]        [min]   mAU   *s     [mAU   ]      %
----|-------|----|-------|----------|----------|--------|
  1  28.226 MM   0.9045    5.80175  1.06906e-1   1.2093
  2  37.167 MM   2.8347  473.94778    2.78656   98.7907
```
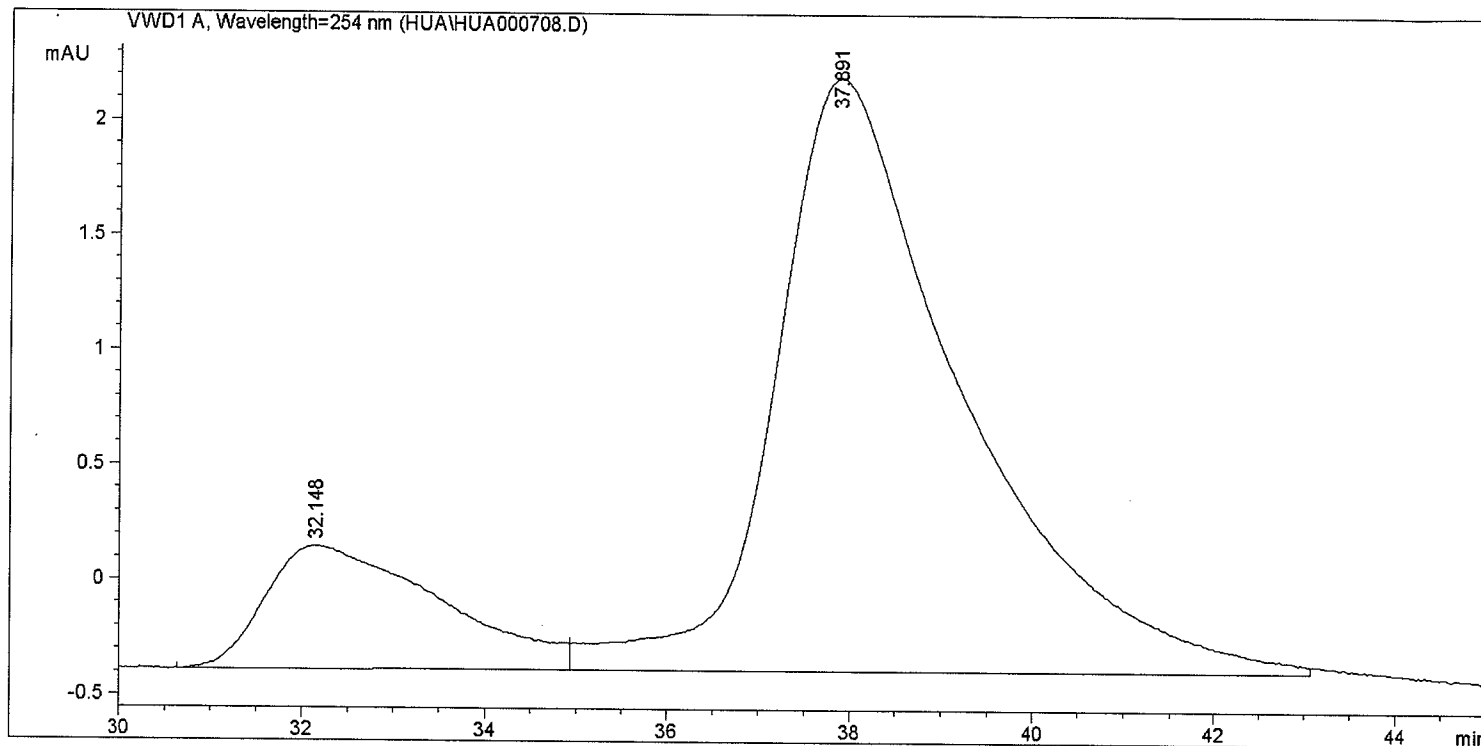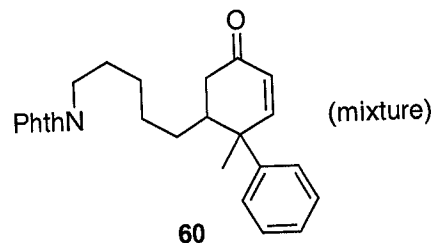
Data File C:\CHEM32\1\DATA\HUA\HUA000708.D
Sample Name: 15-62mix

```
========================================================================
```
Acq. Operator   : HUA   Seq. Line :
Acq. Instrument : Instrument 1   Location : Vi
Injection Date : 2/24/2010 12:43:27 PM   Inj :
                                            Inj Volume : 5

Acq. Method   : C:\CHEM32\1\METHODS\HUA.M
Last changed   : 2/24/2010 12:41:26 PM by HUA
Analysis Method : C:\CHEM32\1\METHODS\HUA.M
Last changed   : 3/15/2010 8:15:26 PM by CHAO
                  (modified after loading)
Method Info   : ADanalytical column, 1.0 mL/min, 254 nm, IPA:1

60   (mixture)


```
========================================================================
                        Fraction Information
========================================================================
Fraction collection off
========================================================================
No Fractions found.
========================================================================
========================================================================
                         Area Percent Report
========================================================================
```

Sorted By   :   Signal
Multiplier   :   1.0000
Dilution   :   1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: VWD1 A, Wavelength=254 nm

Peak RetTime Type Width   Area   Height   Area
  #   [min]   [min]   mAU   *s   [mAU   ]   %
----|-------|----|-------|----------|----------|--------|
  1   32.148 BV   1.7805   71.41869 5.36379e-1 16.1952
  2   37.891 VB   2.0134   369.56851   2.58213   83.8048

Data File C:\CHEM32\1\DATA\HUA\HUA000713.D
Sample Name: 15-62

```
========================================================================
```
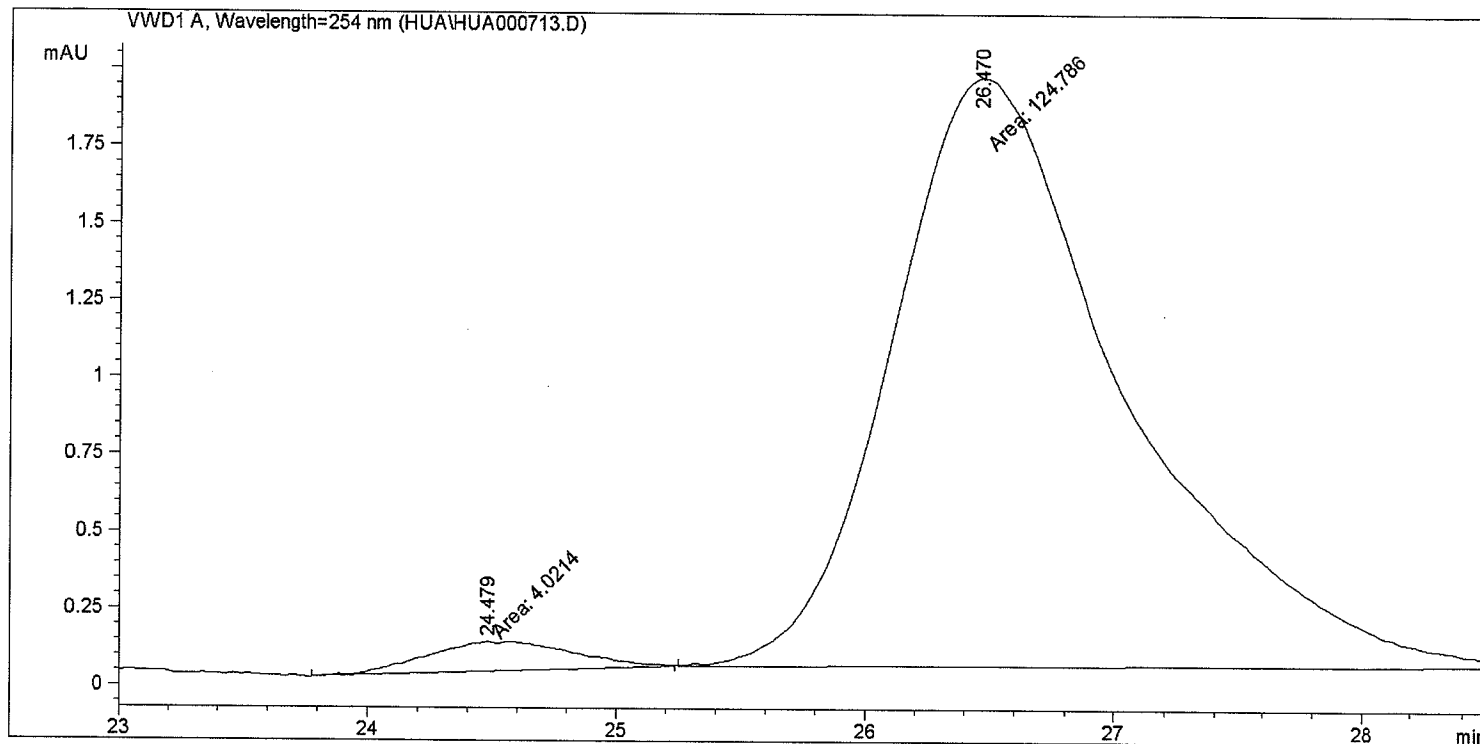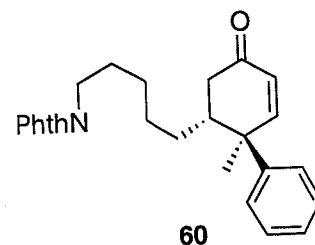Acq. Operator   : HUA   Seq. Line :   1
Acq. Instrument : Instrument 1   Location : Vial 1
Injection Date : 2/24/2010 2:59:32 PM   Inj :   1
                                               Inj Volume : 5 µl

Acq. Method   : C:\CHEM32\1\METHODS\HUA.M
Last changed   : 2/24/2010 1:53:42 PM by HUA
Analysis Method : C:\CHEM32\1\METHODS\HUA.M
Last changed   : 3/15/2010 8:20:41 PM by CHAO
                  (modified after loading)
Method Info   : ADanalytical column, 1.0 mL/min, 254 nm, IPA:HEX10:90

60

VWD1 A, Wavelength=254 nm (HUA\HUA000713.D)

```
========================================================================
```
                          Fraction Information
```
========================================================================
```
Fraction collection off
```
========================================================================
```
No Fractions found.
```
========================================================================
========================================================================
```
                          Area Percent Report
```
========================================================================
```

Sorted By   :   Signal
Multiplier   :   1.0000
Dilution   :   1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: VWD1 A, Wavelength=254 nm

Peak RetTime Type Width   Area   Height   Area
  #   [min]   [min]   mAU   *s   [mAU   ]   %
----|-------|----|-------|----------|----------|--------|
  1 24.479 MM   0.6863   4.02140 9.76536e-2   3.1220
  2 26.470 MM   1.0887 124.78558 1.91027   96.8780

Data File C:\CHEM32\1\DATA\HUA\HUA000603.D
Sample Name: 15-22 mix

```
===============================================================
Acq. Operator   : HUA                      Seq. Line :   1
Acq. Instrument : Instrument 1              Location : Vial 1
Injection Date  : 1/14/2010 10:40:29 AM          Inj :   1
                                          Inj Volume : 5 µl
Acq. Method     : C:\CHEM32\1\METHODS\HUA.M
Last changed    : 1/14/2010 10:38:37 AM by HUA
Analysis Method : C:\CHEM32\1\METHODS\HUA.M
Last changed    : 3/15/2010 8:20:56 PM by CHAO
                  (modified after loading)
Method Info     : ADanalytical column, 1.0 mL/min, 254 nm, IPA:HEX10:90
```
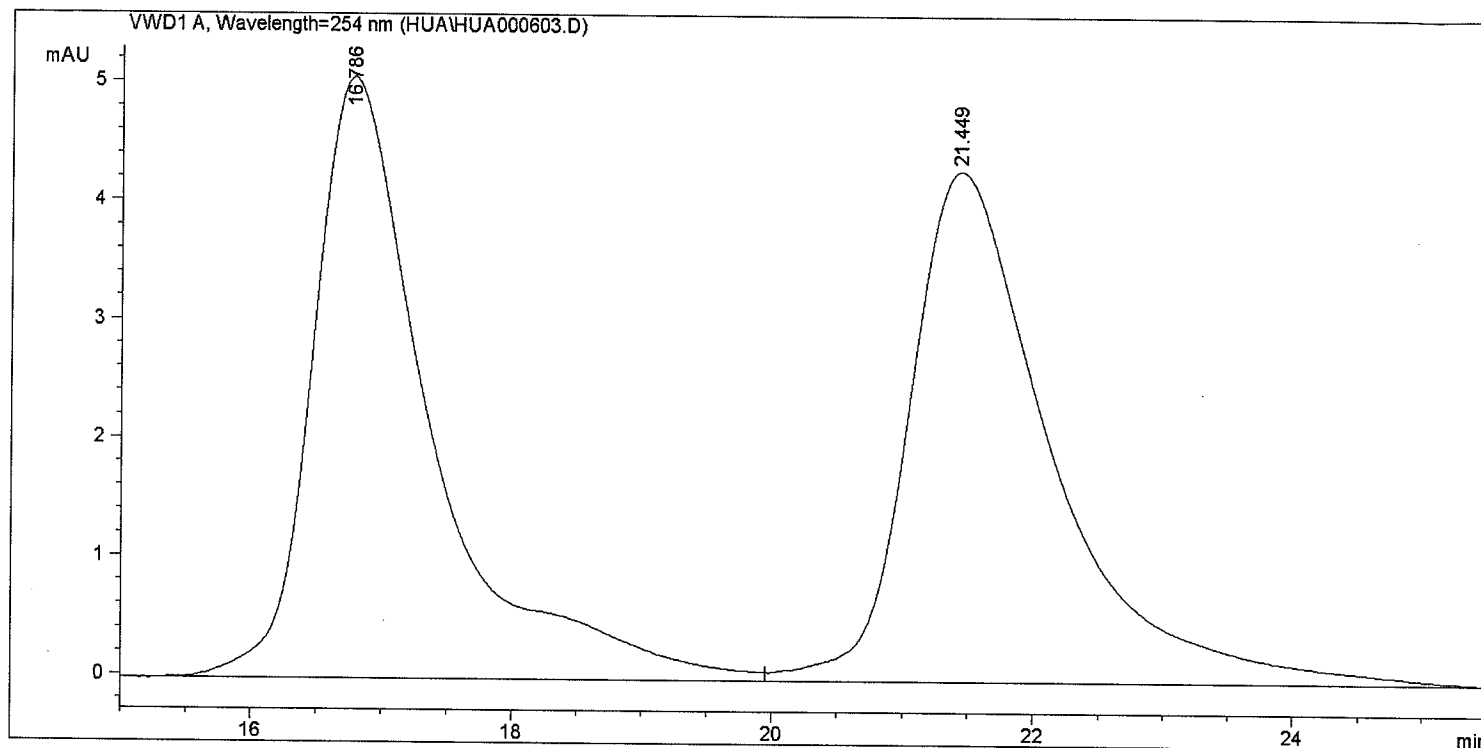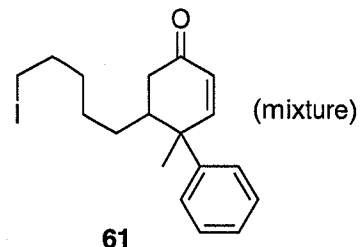
61 (mixture)

VWD1 A, Wavelength=254 nm (HUA\HUA000603.D)

```
===================================================================
                        Fraction Information
===================================================================
Fraction collection off
===================================================================
No Fractions found.
===================================================================
===================================================================
                        Area Percent Report
===================================================================

Sorted By          :       Signal
Multiplier         :       1.0000
Dilution           :       1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: VWD1 A, Wavelength=254 nm

Peak  RetTime Type  Width     Area      Height      Area
 #     [min]        [min]   mAU   *s   [mAU   ]       %
----|-------|----|-------|----------|----------|--------|
  1   16.786 VV    0.9288   322.69986    5.07094   49.5812
  2   21.449 VB    1.1220   328.15085    4.30616   50.4188
```

```
===============================================================
Acq. Operator   : HUA                    Seq. Line :    1
Acq. Instrument : Instrument 1            Location : Vial 1
Injection Date  : 1/14/2010 11:12:28 AM       Inj :    1
                                        Inj Volume : 5 µl
Acq. Method     : C:\CHEM32\1\METHODS\HUA.M
Last changed    : 1/14/2010 10:38:37 AM by HUA
Analysis Method : C:\CHEM32\1\METHODS\HUA.M
Last changed    : 3/15/2010 8:24:36 PM by CHAO
                  (modified after loading)
Method Info     : ADanalytical column, 1.0 mL/min, 254 nm, IPA:HEX10:90
```
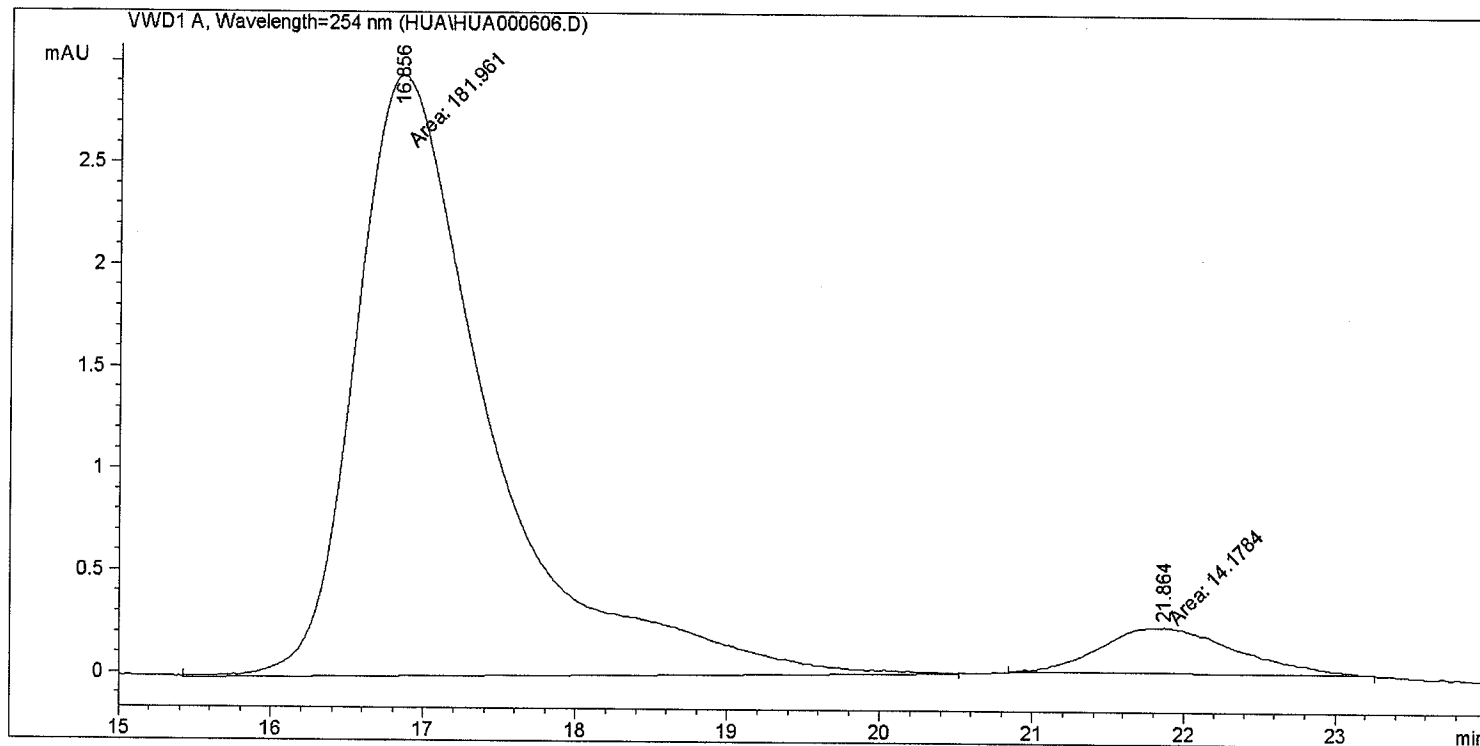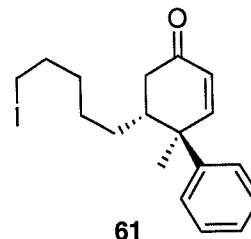
61


```
===============================================================
                      Fraction Information
===============================================================
Fraction collection off
===============================================================
No Fractions found.
===============================================================
===============================================================
                     Area Percent Report
===============================================================


Sorted By          :      Signal
Multiplier         :      1.0000
Dilution           :      1.0000
Use Multiplier & Dilution Factor with ISTDs


Signal 1: VWD1 A, Wavelength=254 nm

Peak RetTime Type  Width     Area      Height     Area
  #   [min]        [min]   mAU   *s    [mAU   ]     %
----|-------|----|-------|----------|----------|--------|
  1  16.856 MM    1.0277  181.96082    2.95105  92.7713
  2  21.864 MM    1.0560   14.17836 2.23772e-1   7.2287
```