

Sat Sep 25 2010 14:38:03

Results[proh-hex.gdt / proh-hex.gan] :

Page 1

Data File: c:\gilson\unipoint\proh-hex.722\proh-hex.gdt
Date acquired: Sat Sep 25 2010 14:23:41
Control Method: C:\GILSON\UNIPPOINT\PROH-HEX.GCT
Analysis Method: c:\gilson\unipoint\proh-hex.gan
Sample name: Step 1 Injection Number: 1 *Unknown*
Analyzed on: Sat Sep 25 2010 14:35:40
<Peak baselines manually adjusted>

Analysis Method Events

0.00	Enable Integration	initial default
0.00	Disable Negative Peak Integration	initial default
0.00	Peak Width 2	initial default
0.00	Peak Sensitivity 5	initial default

Channel Scales

<Auto range all channels>
uv/vis-1510.00 to 10.00 mV (0 %offset), Data rate: 20.00 (points/second) <Auto zero> <Analysis Channel>

Reporting

Area / Height Report (quantify by area)
Min area reported: 50
Include unnamed peaks
Include summary statistics for unknown group samples
Include individual values for unknown group samples
Include summary statistics for standard samples
Include individual values for standard samples

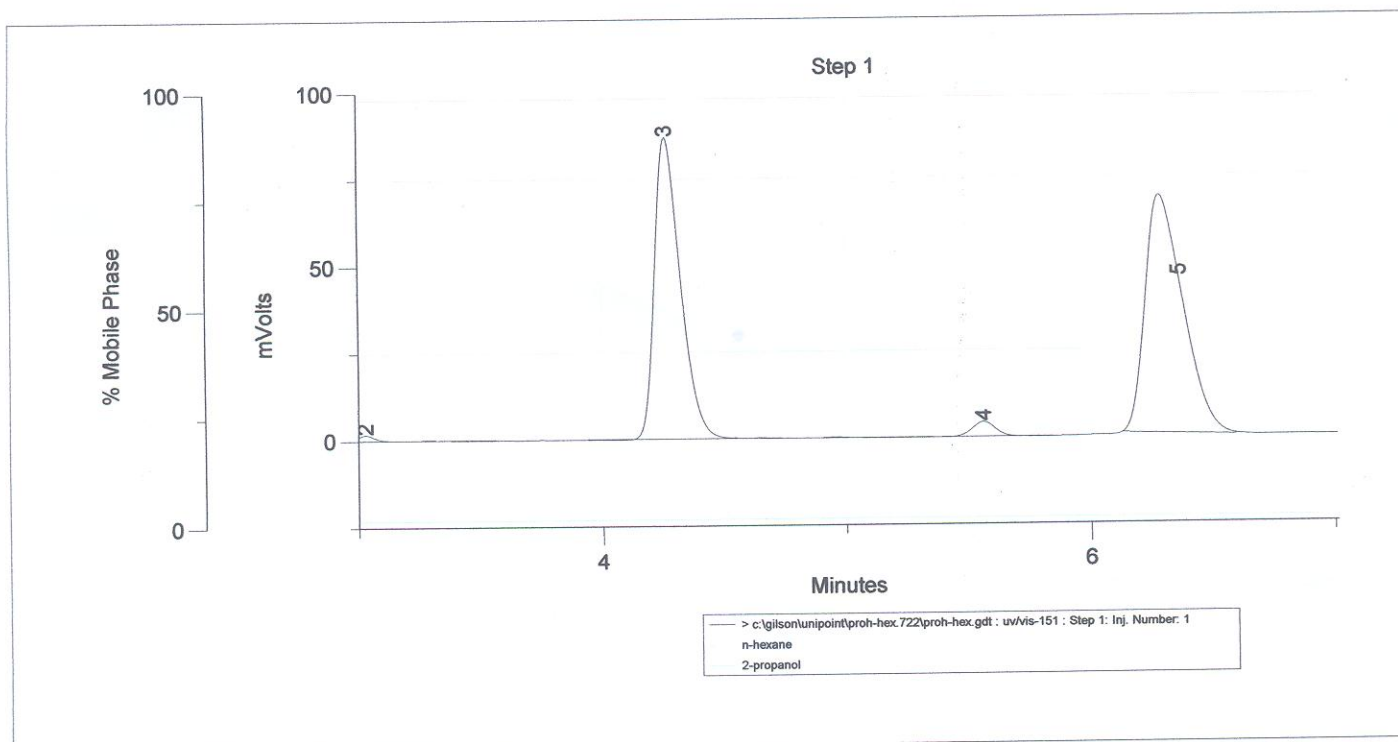
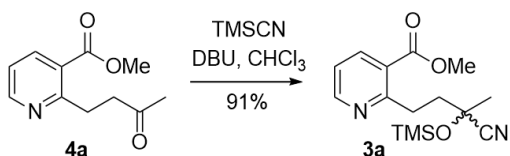
Report Output

Save report to file

	R. Time	Area	Area %	Height				
1	2.53	28816.29	1.20	1.75				
2	3.03	20079.54	0.84	1.76				
3	4.26	1080145.12	44.96	86.94				
4	5.56	47143.75	1.96	4.26				
5	6.29	1226108.12	51.04	68.60				

racemate
chiralpak AD-H
98.5 : 1.5 = Hex : IPA
2.0 mL/min
 $\lambda = 254 \text{ nm}$
ratio = 1 : 1

Scheme 3, racemic cyanohydrins



Data File: c:\gilson\unipoint\proh-hex.721\proh-hex.gdt
 Date acquired: Sat Sep 25 2010 14:14:16
 Control Method: C:\GILSON\UNIPPOINT\PROH-HEX.GCT
 Analysis Method: c:\gilson\unipoint\proh-hex.gan
 Sample name: Step 1 Injection Number: 1 *Unknown*
 Analyzed on: Sat Sep 25 2010 14:40:38
 <Peak baselines manually adjusted>

Analysis Method Events

0.00	Enable Integration	initial default
0.00	Disable Negative Peak Integration	initial default
0.00	Peak Width 2	initial default
0.00	Peak Sensitivity 5	initial default

Channel Scales

<Auto range all channels>

uv/vis-1510.00 to 10.00 mV (0 %offset), Data rate: 20.00 (points/second)

<Auto zero> <Analysis Channel>

Reporting

Area / Height Report (quantify by area)

Min area reported: 50

Include unnamed peaks

Include summary statistics for unknown group samples

Include individual values for unknown group samples

Include summary statistics for standard samples

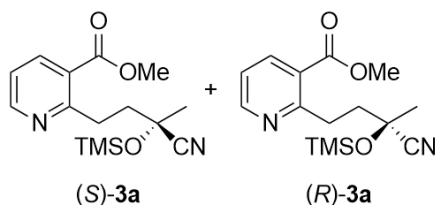
Include individual values for standard samples

Report Output

Save report to file

	R. Time	Area	Area %	Height				
1	1.76	36202.67	8.93	5.90				
2	4.33	173892.11	42.88	13.93				
3	5.36	12452.50	3.07	1.02				
4	6.25	182941.67	45.12	10.60				

Table 1, Entry 2



Jacobsen

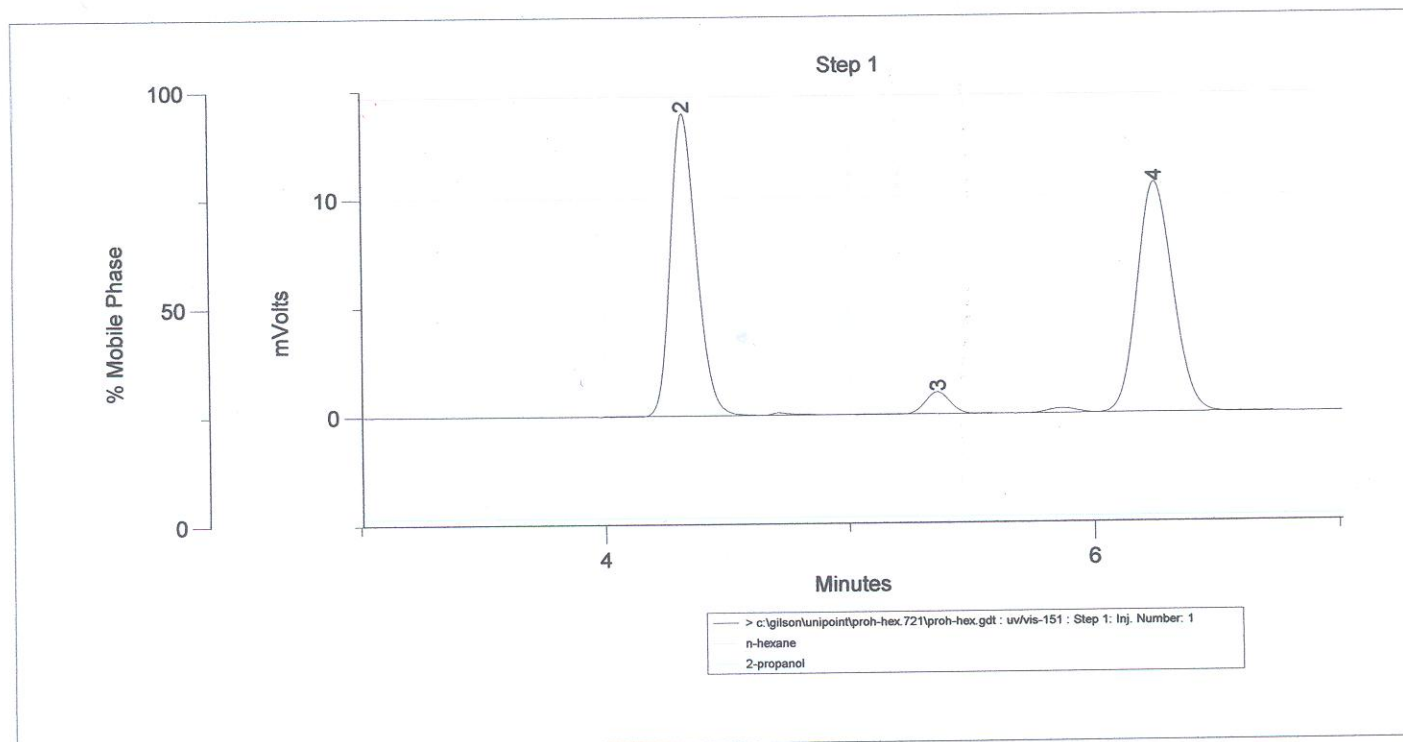
Chiralpak AD-H

98.5 : 1.5 = Hex : IPA

2.0 mL/min

 $\lambda = 254 \text{ nm}$

Ratio = 1 : 1.2



Data File: c:\gilson\unipoint\proh-hex.681\proh-hex.gdt
 Date acquired: Thu Sep 02 2010 14:16:59
 Control Method: C:\GILSON\UNIPPOINT\PROH-HEX.GCT
 Analysis Method: c:\gilson\unipoint\proh-hex.gan
 Sample name: Step 1 Injection Number: 1 "Unknown"
 Analyzed on: Thu Sep 02 2010 15:06:50
 <Peak baselines manually adjusted>

Analysis Method Events

0.00 Enable Integration initial default
 0.00 Disable Negative Peak Integration initial default
 0.00 Peak Width 2 initial default
 0.00 Peak Sensitivity 5 initial default

Channel Scales

<Auto range all channels>

uv/vis-1510.00 to 10.00 mV (0 %offset), Data rate: 20.00 (points/second)

<Auto zero> <Analysis Channel>

Reporting

Area / Height Report (quantify by area)

Min area reported: 50

Include unnamed peaks

Include summary statistics for unknown group samples

Include individual values for unknown group samples

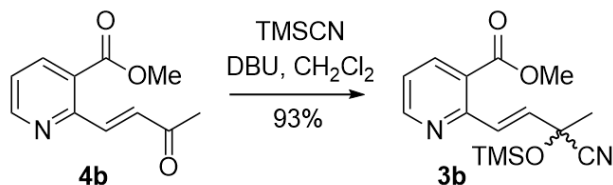
Include summary statistics for standard samples

Include individual values for standard samples

Report Output

Save report to file

	R. Time	Area	Area %	Height				
1	5.42	13929165.00	49.96	1249.61				
2	6.04	13952473.00	50.04	1122.75				

Scheme 3, racemic cyanohydrins

racemate

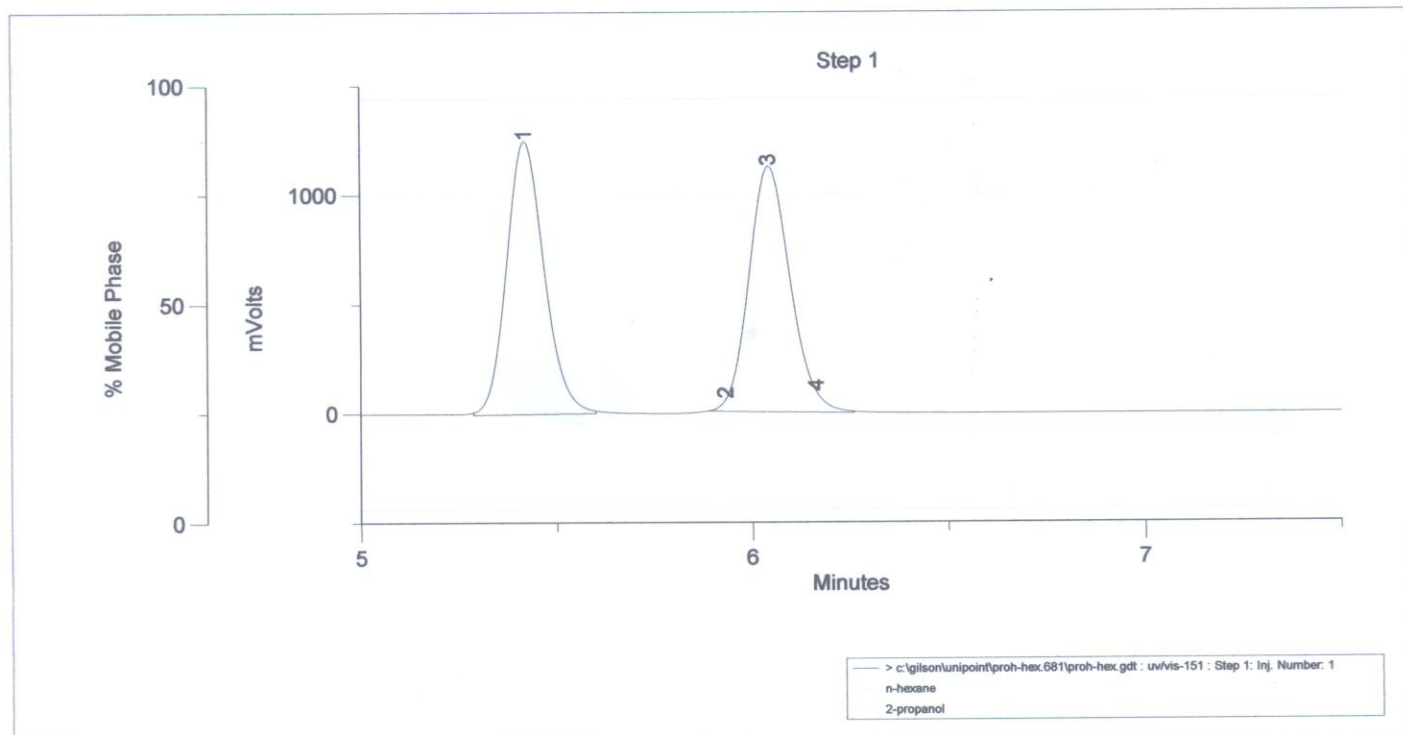
Chiralcel AD-H

97:3 = Hex : IPA

1.0 mL/min

 $\lambda = 254 \text{ nm}$

ratio = 1:1



Data File: c:\gilson\unipoint\proh-hex.683\proh-hex.gdt
Date acquired: Thu Sep 02 2010 14:46:47
Control Method: C:\GILSON\UNIPPOINT\PROH-HEX.GCT
Analysis Method: c:\gilson\unipoint\proh-hex.gan
Sample name: Step 1 Injection Number: 1 "Unknown"
Analyzed on: Thu Sep 02 2010 15:18:43
<Peak baselines manually adjusted>

Analysis Method Events

0.00	Enable Integration	initial default	
0.00	Disable Negative Peak Integration		initial default
0.00	Peak Width 2	initial default	
0.00	Peak Sensitivity 5	initial default	

Channel Scales

<Auto range all channels>
uv/vis-1510.00 to 10.00 mV (0 %offset), Data rate: 20.00 (points/second) <Auto zero> <Analysis Channel>

Reporting

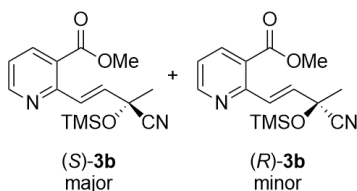
Area / Height Report (quantify by area)
Min area reported: 50
Include unnamed peaks
Include summary statistics for unknown group samples
Include individual values for unknown group samples
Include summary statistics for standard samples
Include individual values for standard samples

Report Output

Save report to file

	R. Time	Area	Area %	Height								
1	4.43	823253.31	7.67	41.37								
2	5.33	9634430.00	89.78	849.18								
3	5.95	273879.78	2.55	19.89								

Table 1, Entry 3



Jacobson

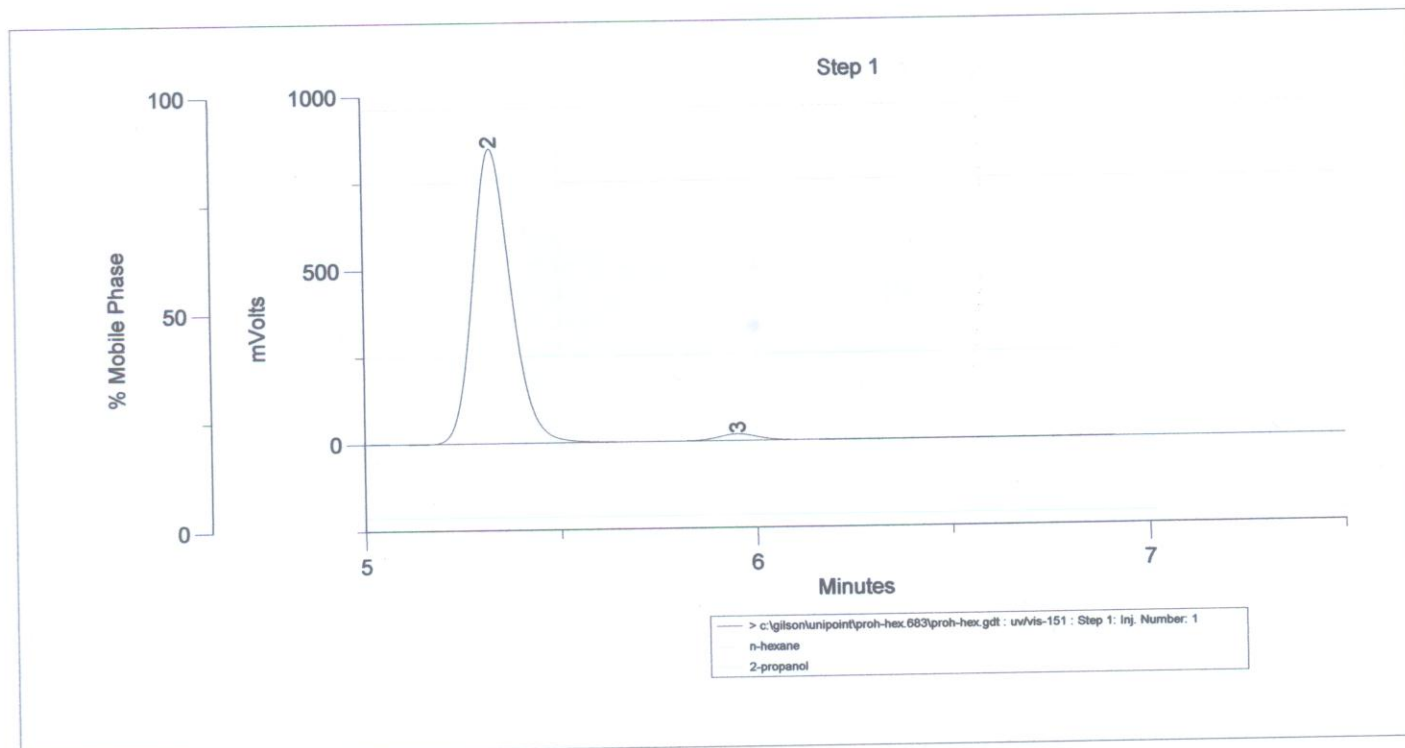
Chiralcel AD-H

99:3 = Hex:IPA

1.0 mL/min

 $\lambda = 254 \text{ nm}$

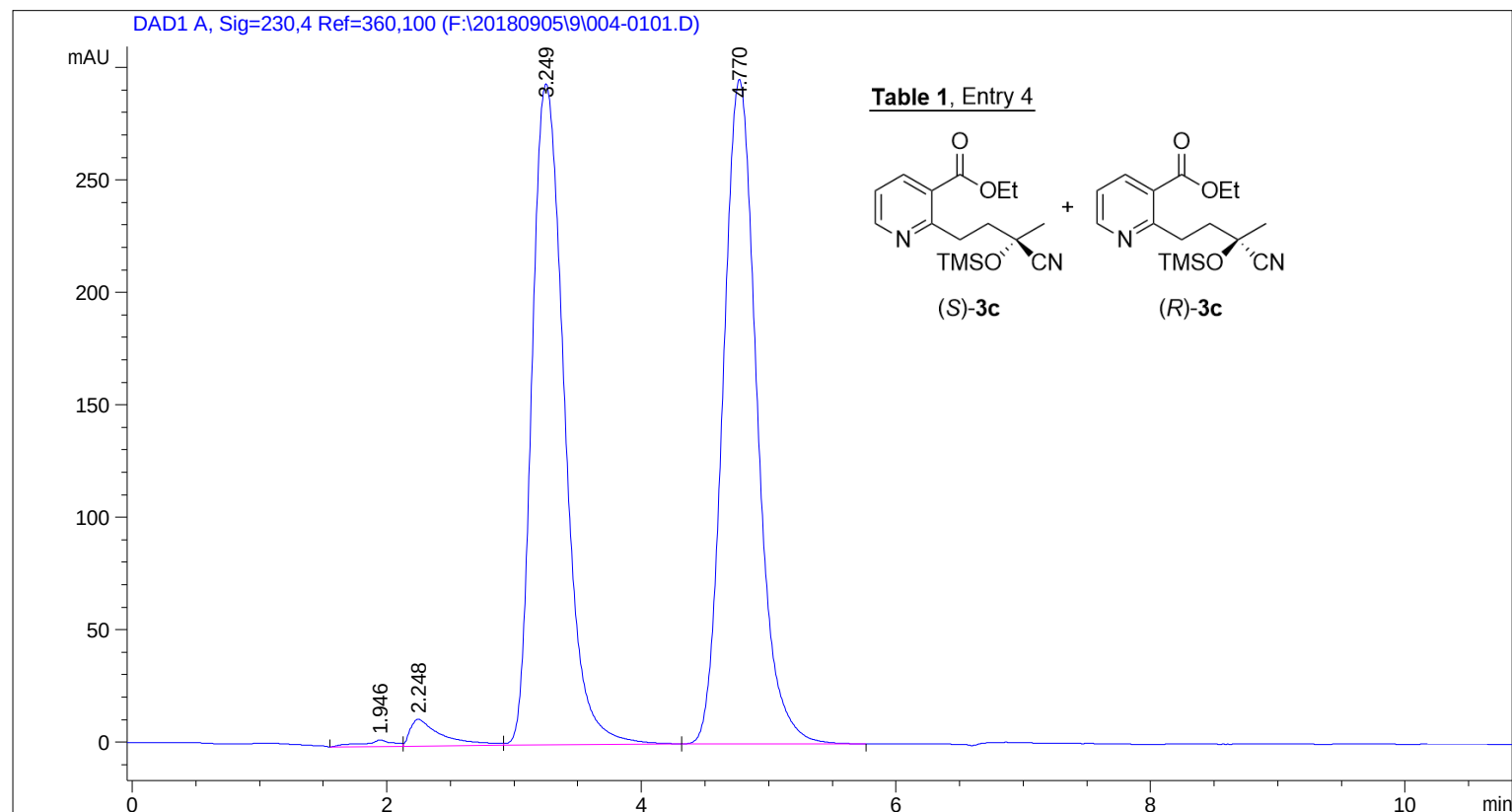
ratio = 35:1 >



Sample Name: YW-09

```
=====
Acq. Operator   : JHJIN                      Seq. Line :    1
Acq. Instrument : Instrument 1                Location  : Vial 4
Injection Date  : 9/5/2018 1:28:41 PM         Inj       :    1
                                           Inj Volume: 5.0 µl

Acq. Method     : C:\CHEM32\1\DATA\DAICEL 2018-09-05 13-27-29\1.M
Last changed    : 9/5/2018 1:39:33 PM by JHJIN
                  (modified after loading)
Analysis Method : C:\CHEM32\1\METHODS\DEF_LC.M
Sample Info     : CHIRALPAK AD-3
                  Hex/IPA=98.5/1.5
                  Flow rate:.0.5ml/min
=====
```



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

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

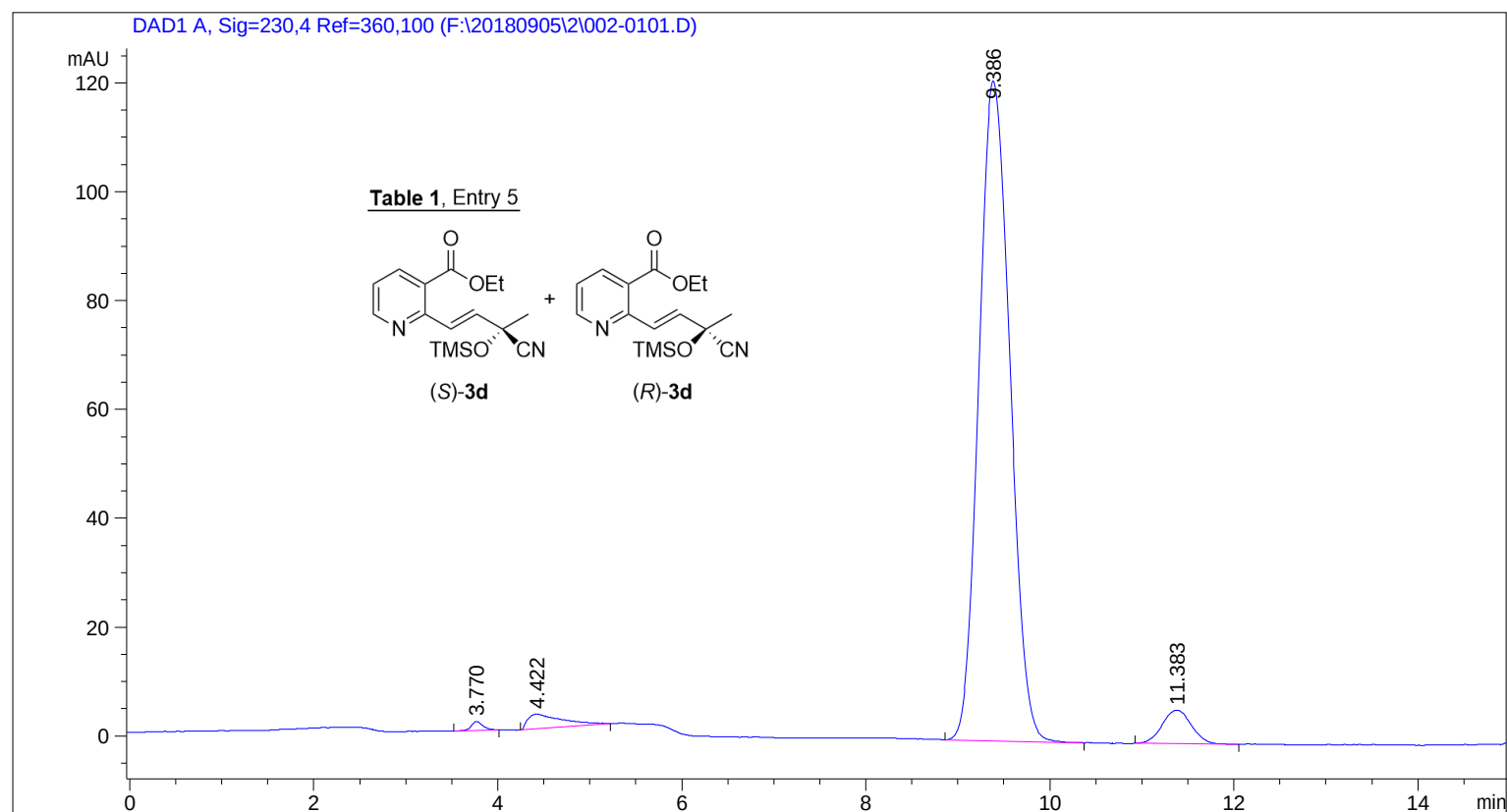
Signal 1: DAD1 A, Sig=230,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	1.946	BV	0.2073	47.74458	2.94178	0.4398
2	2.248	VV	0.2365	204.70827	12.03244	1.8855
3	3.249	VB	0.2807	5158.49609	293.99252	47.5122
4	4.770	BB	0.2871	5446.26123	295.41974	50.1626

Sample Name: YW-02

```
=====
Acq. Operator   : JHJIN                      Seq. Line :    1
Acq. Instrument : Instrument 1                Location  : Vial 2
Injection Date  : 9/5/2018 11:55:24 AM       Inj       :    1
                                           Inj Volume: 5.0 µl

Acq. Method     : C:\CHEM32\1\DATA\DAICEL 2018-09-05 11-49-06\1.M
Last changed    : 9/5/2018 11:49:04 AM by JHJIN
Analysis Method : C:\CHEM32\1\METHODS\DEF_LC.M
Sample Info     : CHIRALPAK IG-3
                  Hex/IPA=98.5/1.5
                  Flow rate:.0.5ml/min
=====
```



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

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

Signal 1: DAD1 A, Sig=230,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	3.770	BB	0.1263	14.83917	1.65909	0.4850
2	4.422	BB	0.3336	68.79215	2.71530	2.2482
3	9.386	BB	0.3733	2839.57471	121.21464	92.8022
4	11.383	BB	0.3333	136.60718	6.19448	4.4646

```
Totals :                      3059.81321  131.78351
```

Data File: c:\gilson\unipoint\proh-hex.685\proh-hex.gdt
 Date acquired: Thu Sep 02 2010 15:11:57
 Control Method: C:\GILSON\UNIPPOINT\PROH-HEX.GCT
 Analysis Method: c:\gilson\unipoint\proh-hex.gan
 Sample name: Step 1 Injection Number: 1 "Unknown"
 Analyzed on: Thu Sep 02 2010 15:37:23
 <Peak baselines manually adjusted>

Analysis Method Events

0.00 Enable Integration initial default
 0.00 Disable Negative Peak Integration initial default
 0.00 Peak Width 2 initial default
 0.00 Peak Sensitivity 5 initial default

Channel Scales

<Auto range all channels>

uv/vis-1510.00 to 10.00 mV (0 %offset), Data rate: 20.00 (points/second)

<Auto zero> <Analysis Channel>

Reporting

Area / Height Report (quantify by area)

Min area reported: 50

Include unnamed peaks

Include summary statistics for unknown group samples

Include individual values for unknown group samples

Include summary statistics for standard samples

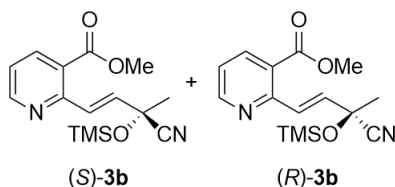
Include individual values for standard samples

Report Output

Save report to file

	R. Time	Area	Area %	Height				
1	0.68	336605.69	27.36	7.64				
2	5.31	589617.81	47.93	44.18				
3	5.92	303882.34	24.70	22.58				

Table 1, Entry 6

(DHQ)₂ PHAL

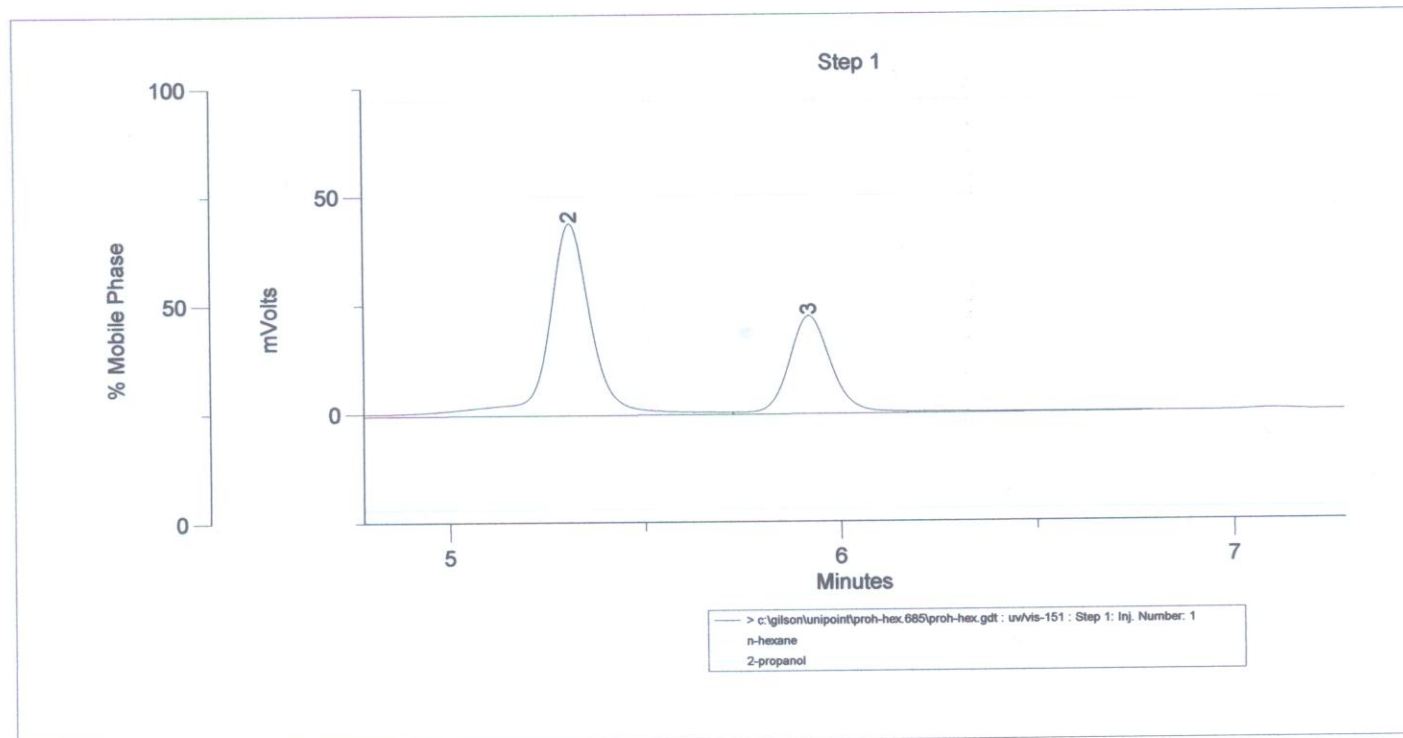
Chiralcel AD-H

97:3 = Hex:IPA

1.0 mL/min

 $\lambda = 254\text{nm}$

ratio = 1.9 : 1



Data File: c:\gilson\unipoint\proh-hex.684\proh-hex.gdt
Date acquired: Thu Sep 02 2010 14:56:39
Control Method: C:\GILSON\UNIPPOINT\PROH-HEX.GCT
Analysis Method: c:\gilson\unipoint\proh-hex.gan
Sample name: Step 1 Injection Number: 1 *Unknown*
Analyzed on: Thu Sep 02 2010 15:30:49
<Peak baselines manually adjusted>

Analysis Method Events

0.00	Enable Integration	initial default
0.00	Disable Negative Peak Integration	initial default
0.00	Peak Width 2	initial default
0.00	Peak Sensitivity 5	initial default

Channel Scales

<Auto range all channels>

uv/vis-1510.00 to 10.00 mV (0 % offset), Data rate: 20.00 (points/second)

<Auto zero> <Analysis Channel>

Reporting

Area / Height Report (quantify by area)

Min area reported: 50

Include unnamed peaks

Include summary statistics for unknown group samples

Include individual values for unknown group samples

Include summary statistics for standard samples

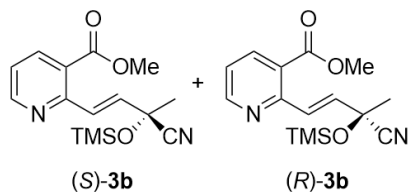
Include individual values for standard samples

Report Output

Save report to file

	R. Time	Area	Area %	Height			
1	4.42	1474792.50	13.30	31.79			
2	5.31	2455208.00	22.15	220.48			
3	5.93	7154674.50	64.55	579.39			

Table 1, Entry 7

(DHQD)₂ AQH

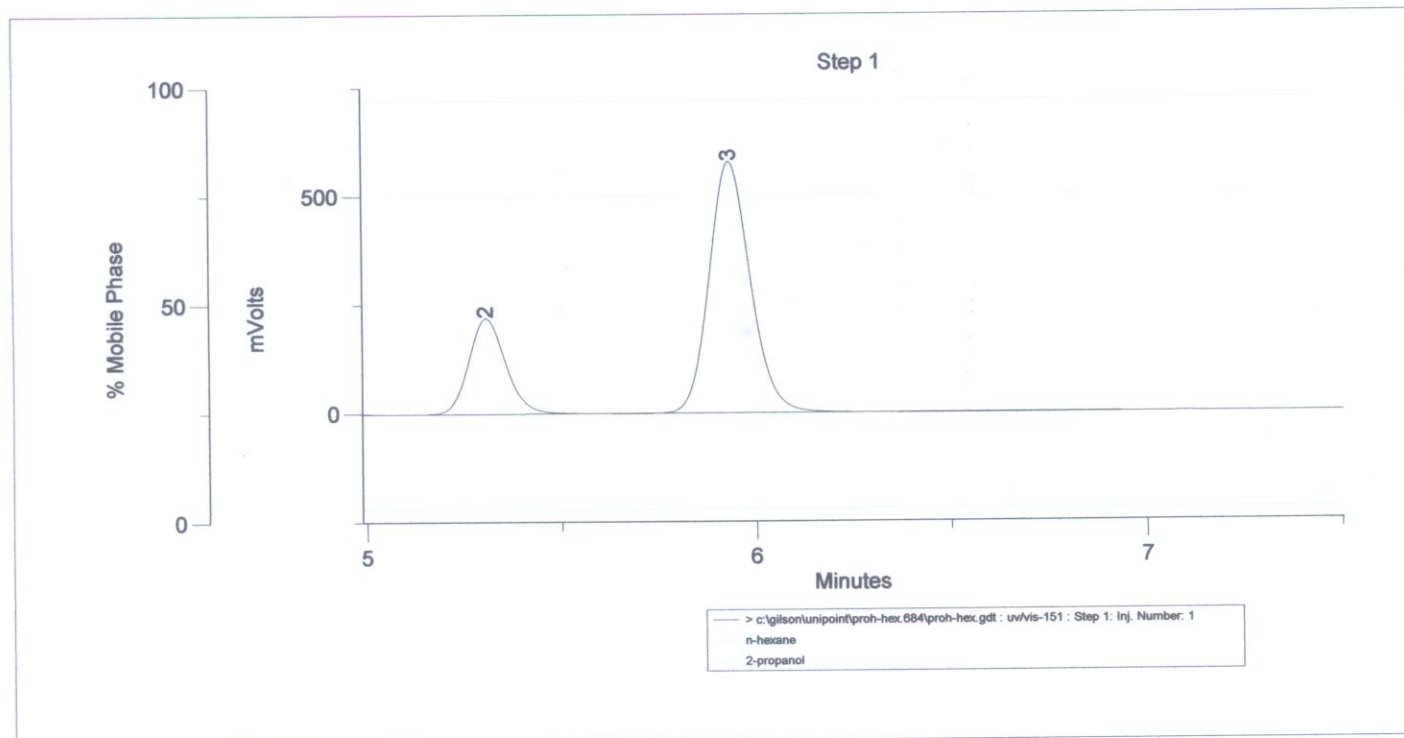
Chiralcel AD-H

97:3 = Hex: IPA

1.0 mL/min

 $\lambda = 254 \text{ nm}$

ratio = 1:2.9



Sample Name: YW-10-DBU

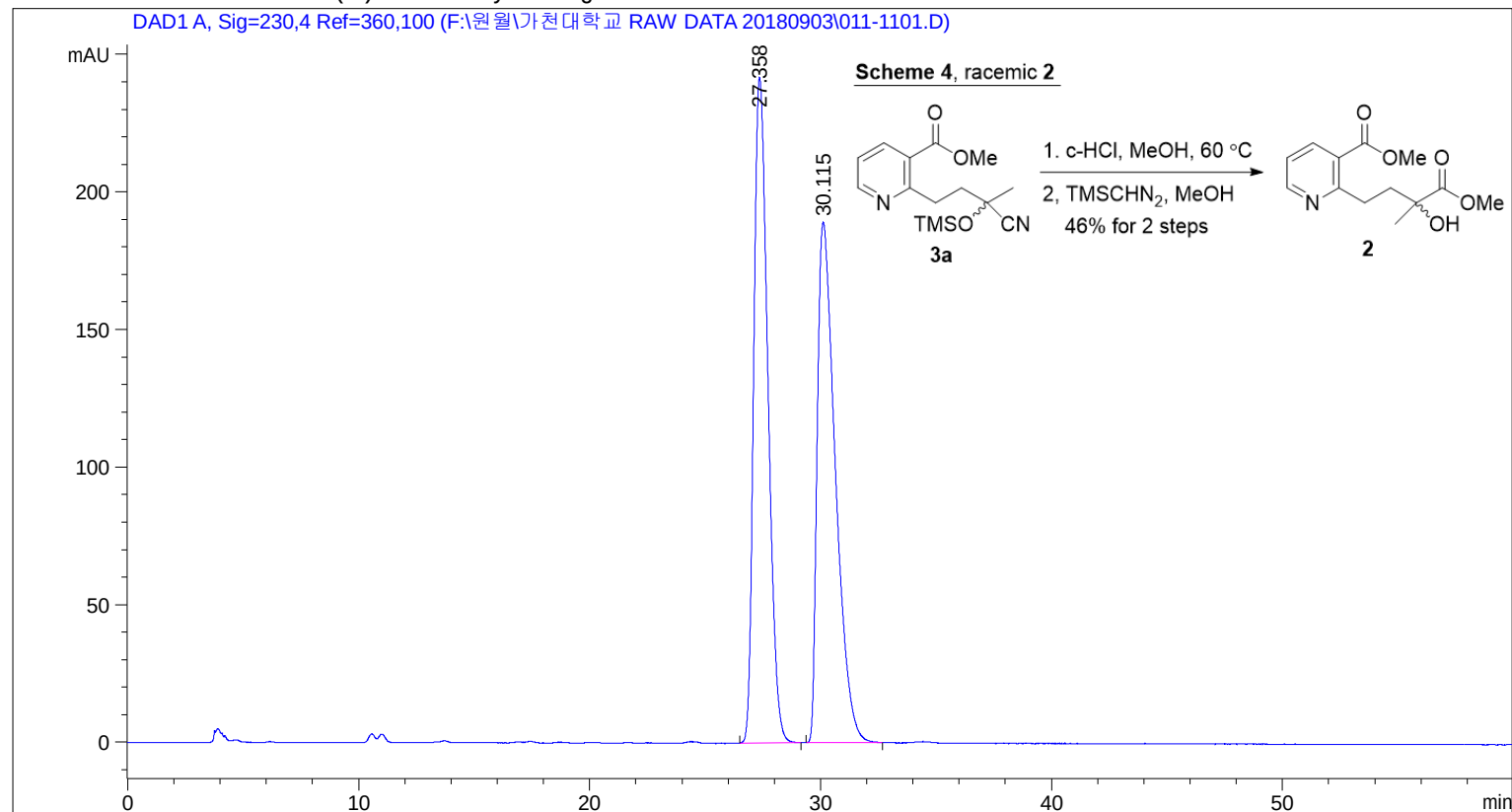
```

=====
Acq. Operator   : JHJIN                      Seq. Line :   11
Acq. Instrument : Instrument 1                Location  : Vial 11
Injection Date  : 9/1/2018 1:56:20 AM         Inj       :    1
                                           Inj Volume: 10.0 µl

Acq. Method     : C:\CHEM32\1\DATA\DAICEL 2018-08-31 15-30-03\1.M
Last changed    : 8/31/2018 3:30:00 PM by JHJIN
Analysis Method : C:\CHEM32\1\METHODS\DEF_LC.M
Sample Info     : CHIRALPAK IA-3
                  Hex/EtOH=95-5
                  Flow rate:.05ml/min
=====

```

Additional Info : Peak(s) manually integrated



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

```

```

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

```

Signal 1: DAD1 A, Sig=230,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	27.358	BB	0.6605	1.02914e4	241.80954	49.9547
2	30.115	BB	0.8139	1.03101e4	189.15881	50.0453

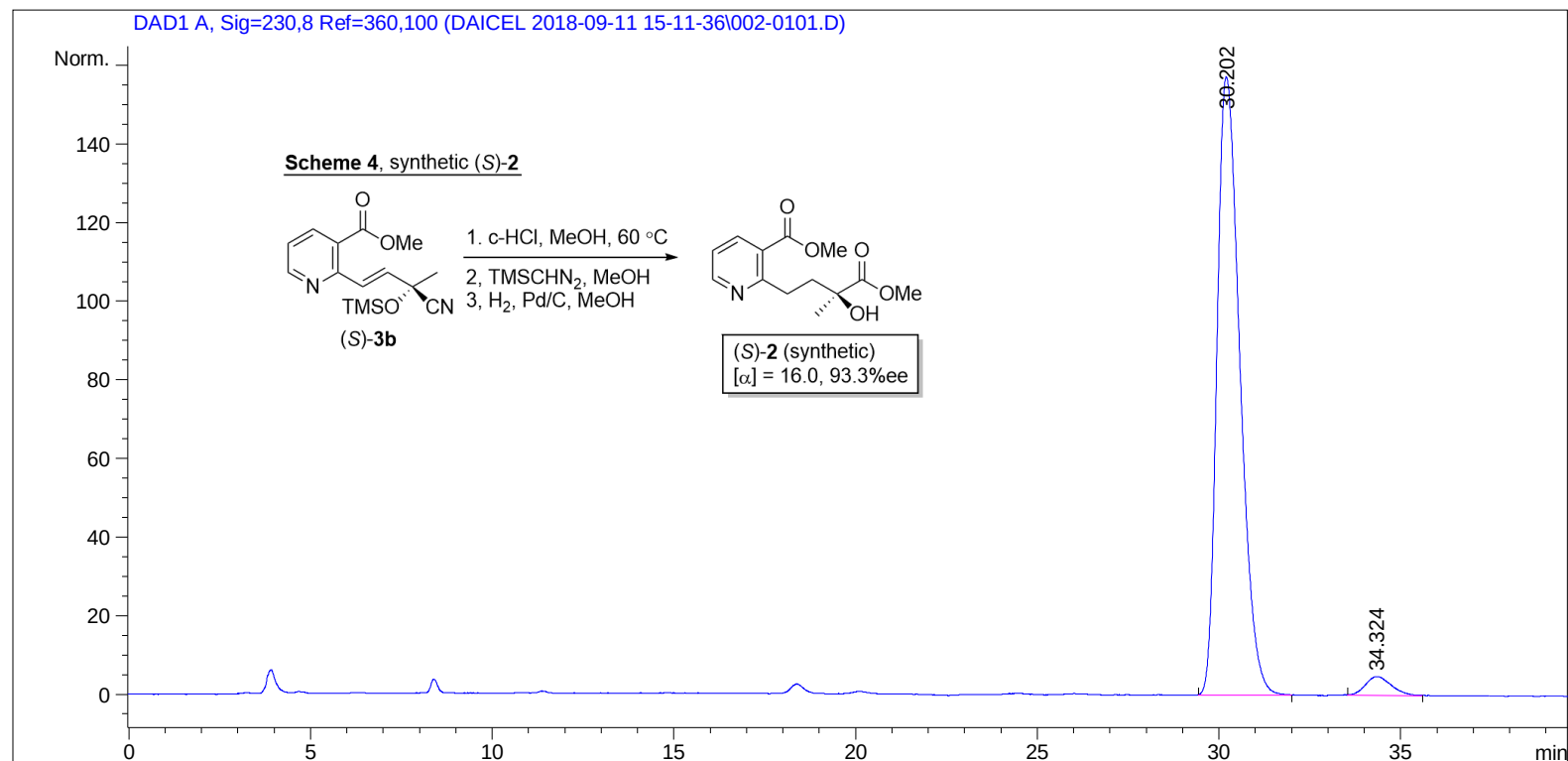
Totals : 2.06015e4 430.96835

Sample Name: YW-14

=====

Acq. Operator	: JHJIN	Seq. Line	: 1
Acq. Instrument	: Instrument 1	Location	: Vial 2
Injection Date	: 9/11/2018 3:12:47 PM	Inj	: 1
		Inj Volume	: 5.0 µl
Acq. Method	: C:\CHEM32\1\DATA\DAICEL 2018-09-11 15-11-36\1.M		
Last changed	: 9/11/2018 3:11:29 PM by JHJIN		
Analysis Method	: C:\CHEM32\1\DATA\DAICEL 2018-08-28 15-21-49\1.M		
Last changed	: 9/11/2018 3:53:42 PM by JHJIN		
	(modified after loading)		
Sample Info	: CHIRALPAK IA-3 (4.6*150)		
	Hex/EtOH=95/5		
	Flow rate:.05 ml/min		

=====



=====

Area Percent Report

=====

Sorted By : Signal

Multiplier: : 1.0000

Dilution: : 1.0000

Use Multiplier & Dilution Factor with ISTDs

Sample Name: YW-14

Signal 1: DAD1 A, Sig=230,8 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	30.202	BB	0.6823	6878.77637	157.27841	96.6294
2	34.324	BB	0.7235	239.94470	4.83067	3.3706

Totals : 7118.72107 162.10909

=====
*** End of Report ***

Sample Name: YW-13

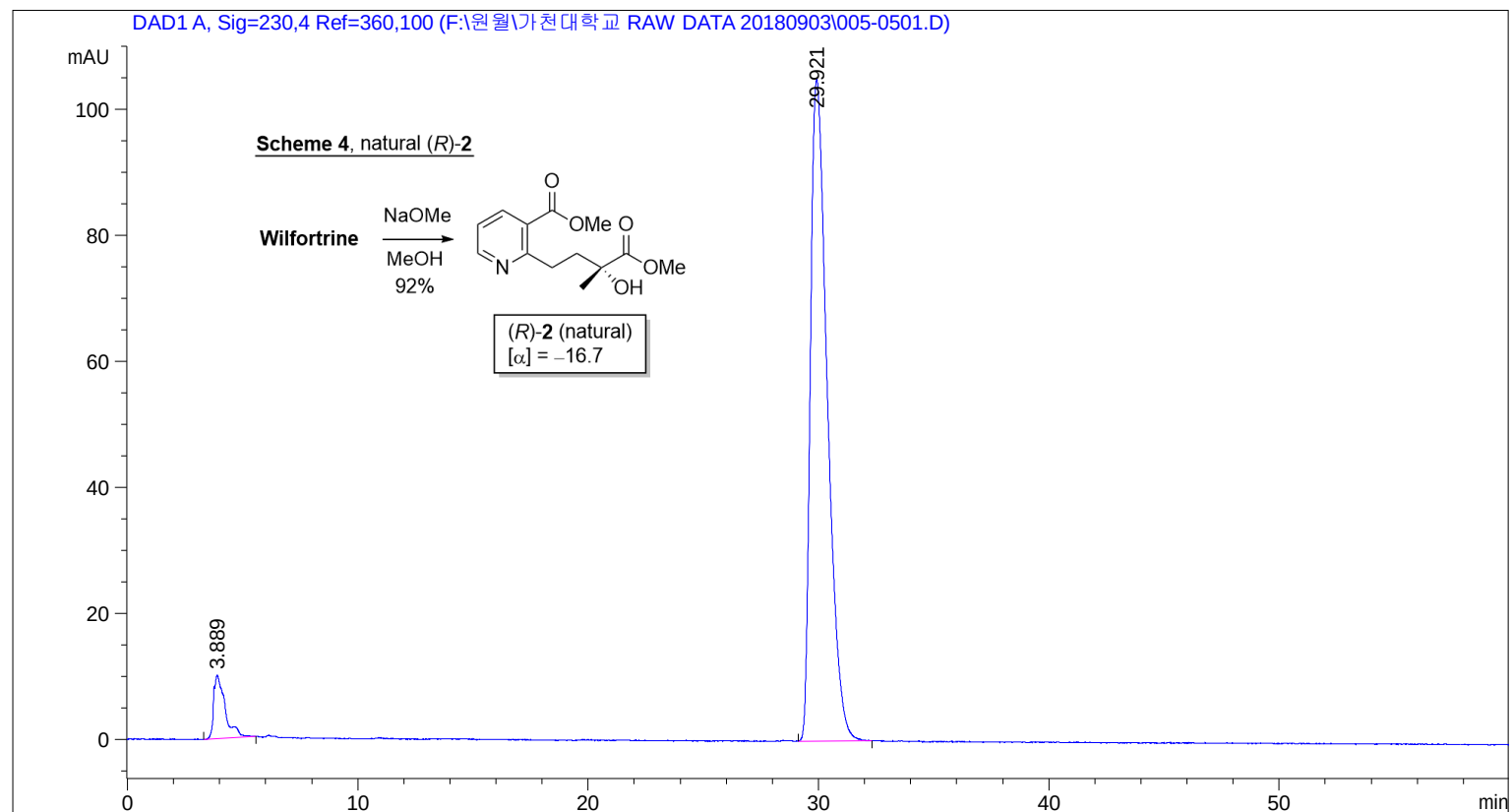
```

=====
Acq. Operator   : JHJIN                      Seq. Line :    5
Acq. Instrument : Instrument 1                Location  : Vial 5
Injection Date  : 8/31/2018 7:47:22 PM       Inj       :    1
                                           Inj Volume: 10.0 µl

Acq. Method     : C:\CHEM32\1\DATA\DAICEL 2018-08-31 15-30-03\1.M
Last changed    : 8/31/2018 3:30:00 PM by JHJIN
Analysis Method : C:\CHEM32\1\METHODS\DEF_LC.M
Last changed    : 9/3/2018 3:52:44 PM by SYSTEM
                  (modified after loading)

Sample Info     : CHIRALPAK IA-3
                  Hex/EtOH=95-5
                  Flow rate:.0.5ml/min
=====

```



```

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

```

```

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

```

Signal 1: DAD1 A, Sig=230,4 Ref=360,100

Peak #	RetTime [min]	Type	Width [min]	Area [mAU*s]	Height [mAU]	Area %
1	3.889	BB	0.4652	352.91281	10.11250	6.1887
2	29.921	BB	0.7761	5349.62744	105.05171	93.8113

Totals : 5702.54025 115.16421

Angene International Limited

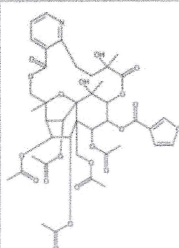
Angene International Limited

Add: CHURCHILL HOUSE 142-146 OLD STREET LONDON, ENGLAND EC1V 9BW
UNITED KINGDOM

Tel: +44 020 32390665

Email: sales@angenechemical.com

Certificate of Analysis

Batch No.:	G01-10483-1	Molecular Formula	C41H47NO20	
CAS Registry No.:	37239-48-8	Molecular Weight	873.81	
Manufacture Date	2018-07-30	Net Weight	0.05g	
Product ID		Storage conditions	Store under dry conditions at 2-8℃	
Product Name:	Wilfortrine			
Items	Specifications	Results		
Appearance	White powder		Conforms	
Purity	≥98%		Conforms	
HNMR			Conforms	
Report Date	2018-07-30			
Analyst	Hui Dou			
Supervisor	ChenSun			

→CR-W-02

Conclusion: The above product meets the specifications of Angene