Electronic Supplementary Material (ESI) for RSC Advances.


# Catalytic Asymmetric Conjugate Addition of Various α-Mercaptoketones to α,β-Unsaturated *N*-Acylated Oxazolidin-2-ones with Bifunctional Organocatalyst

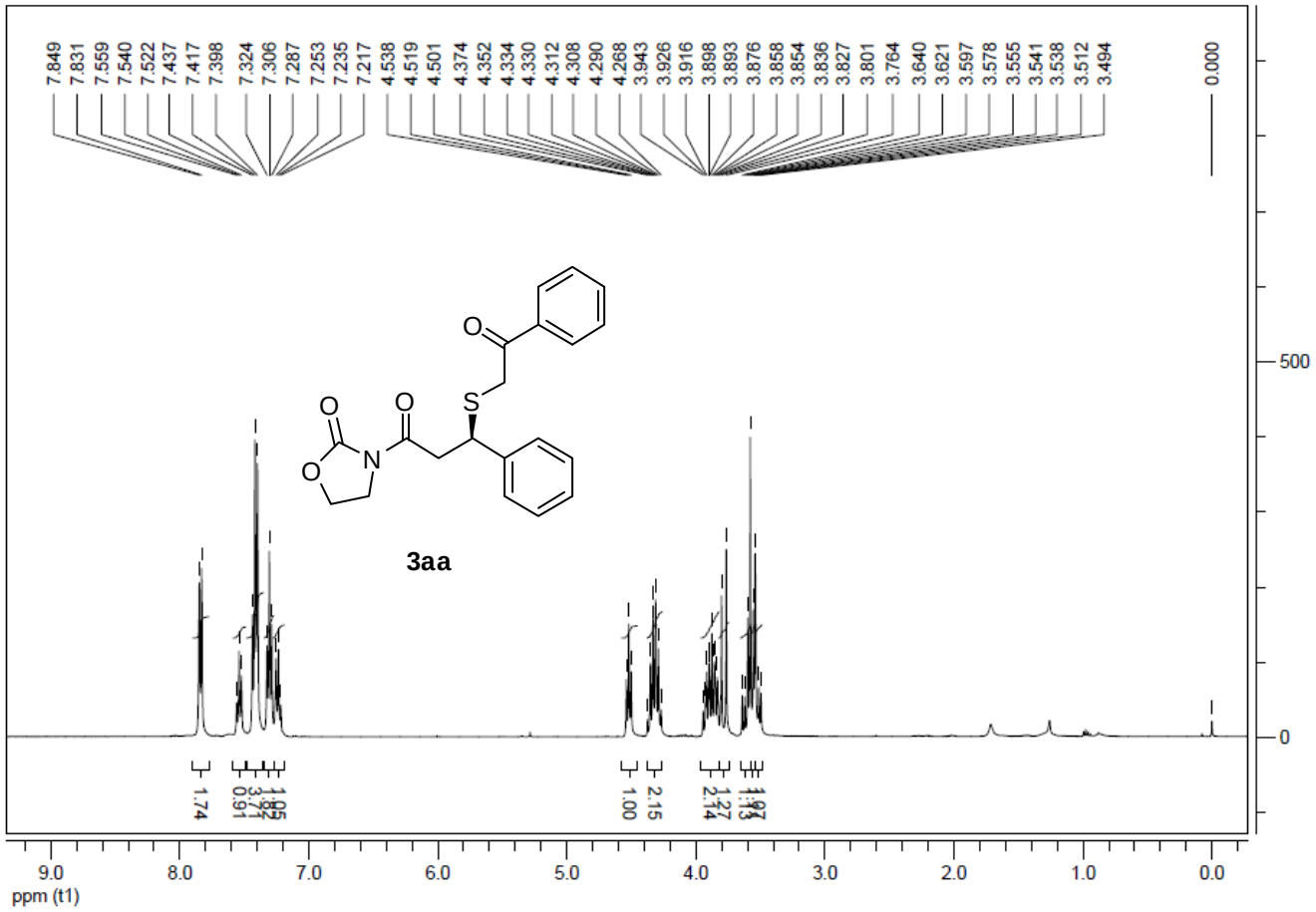
Bo-Liang Zhao and Da-Ming Du*

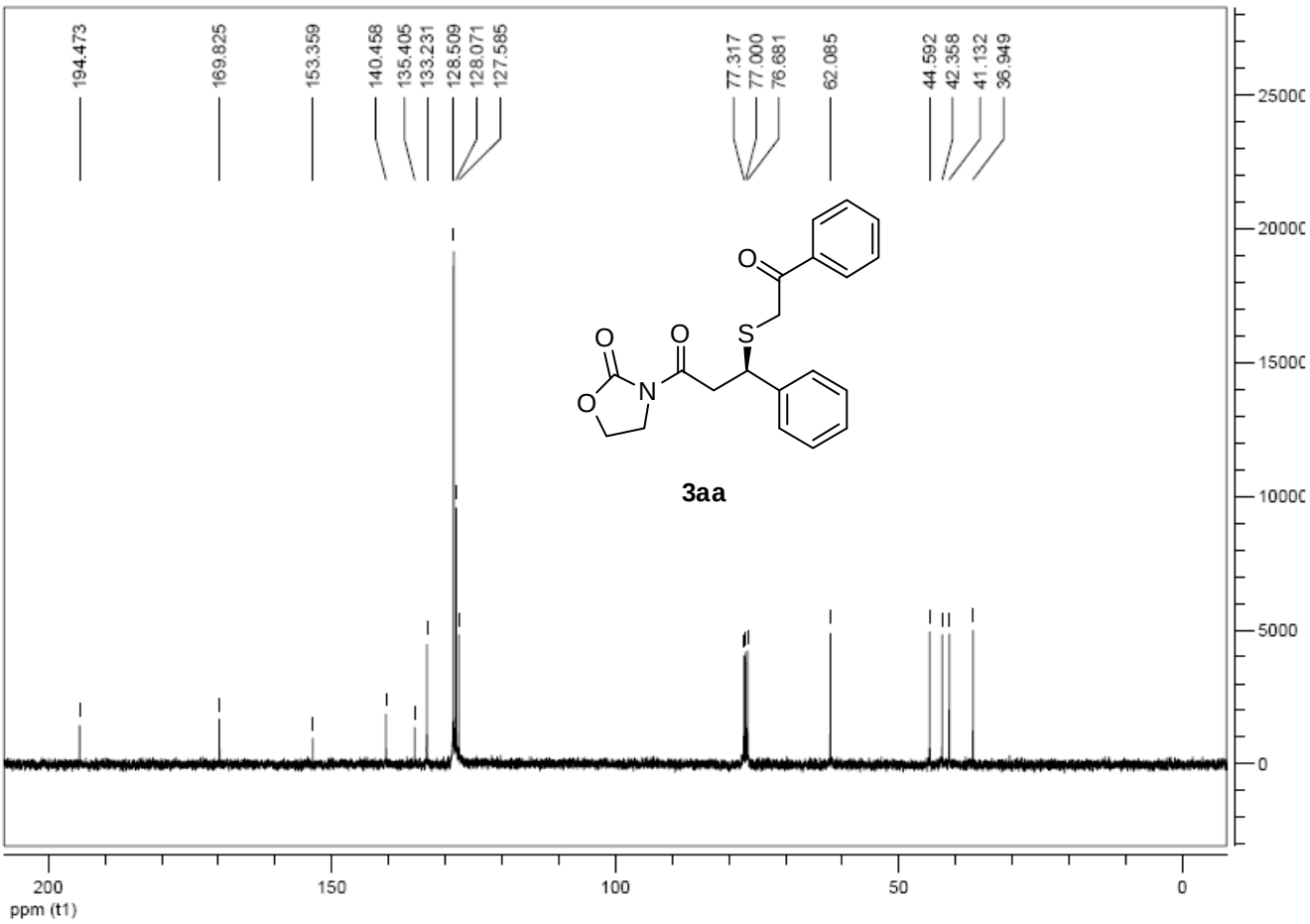
*School of Chemical Engineering and Environment, Beijing Institute of Technology, Beijing 100081, People's Republic of China*
dudm@bit.edu.cn

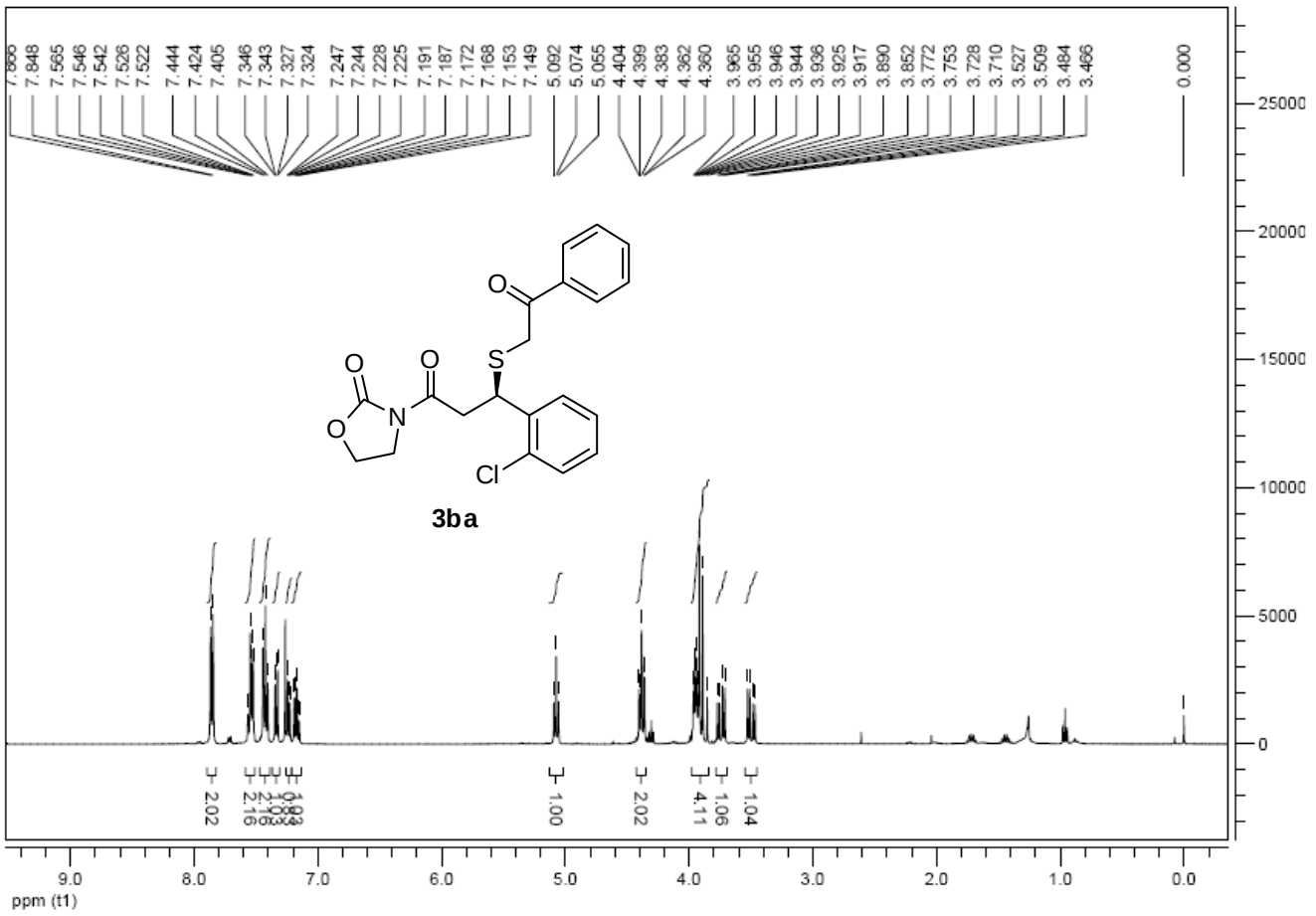
## *Supporting Information*

**Contents**

## 1. Copies of $^{1}H$ and $^{13}C$ NMR spectra of new compounds

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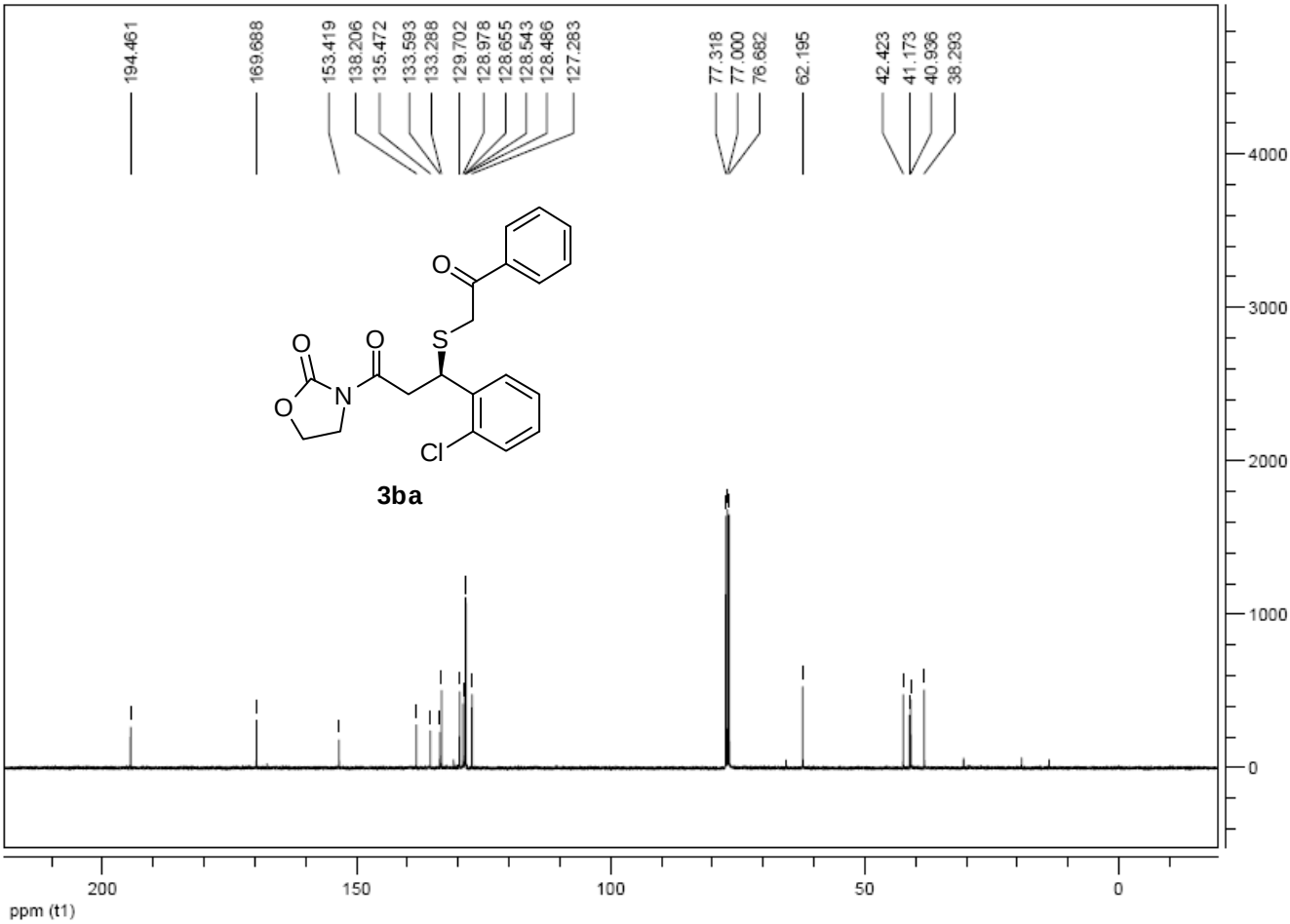
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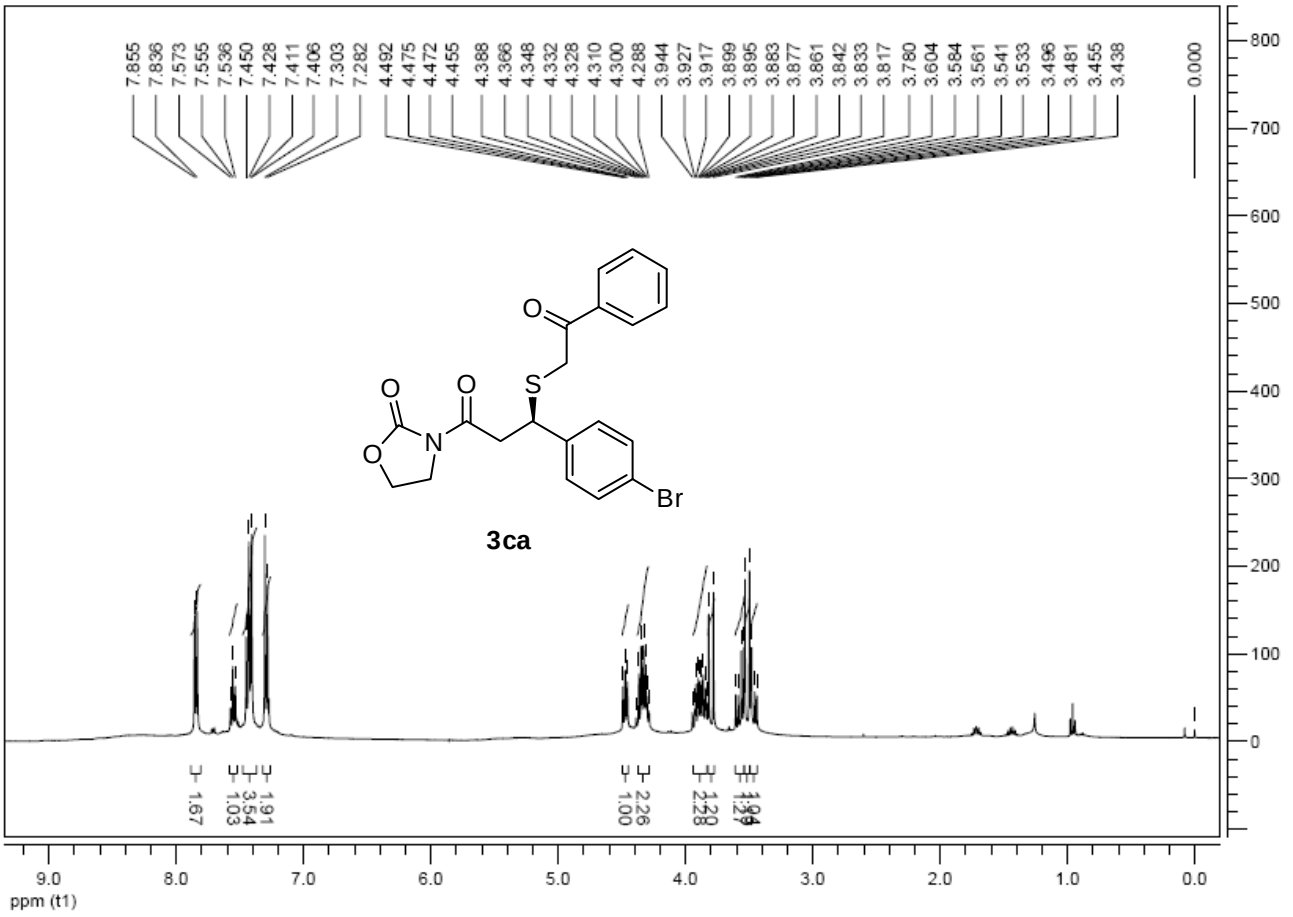
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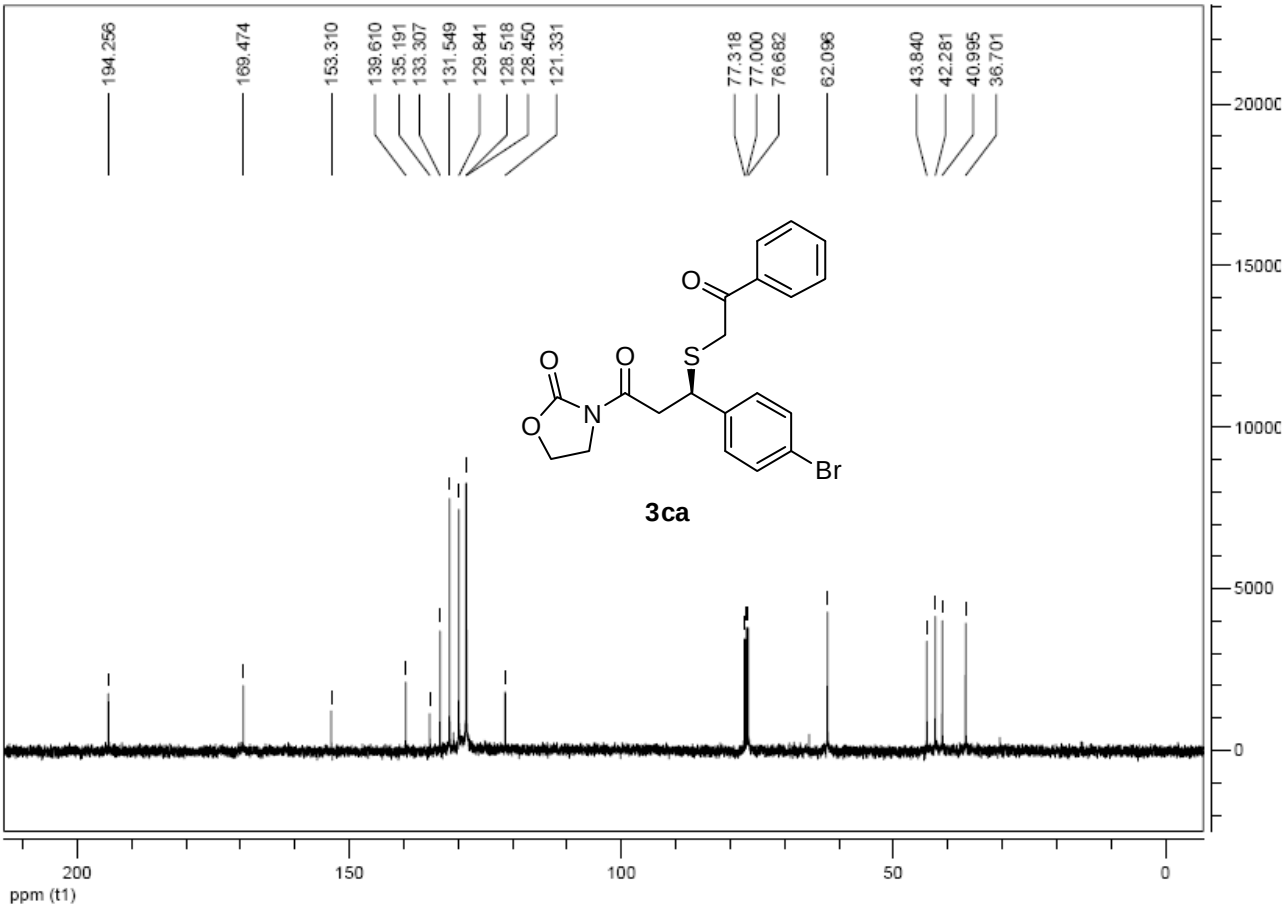
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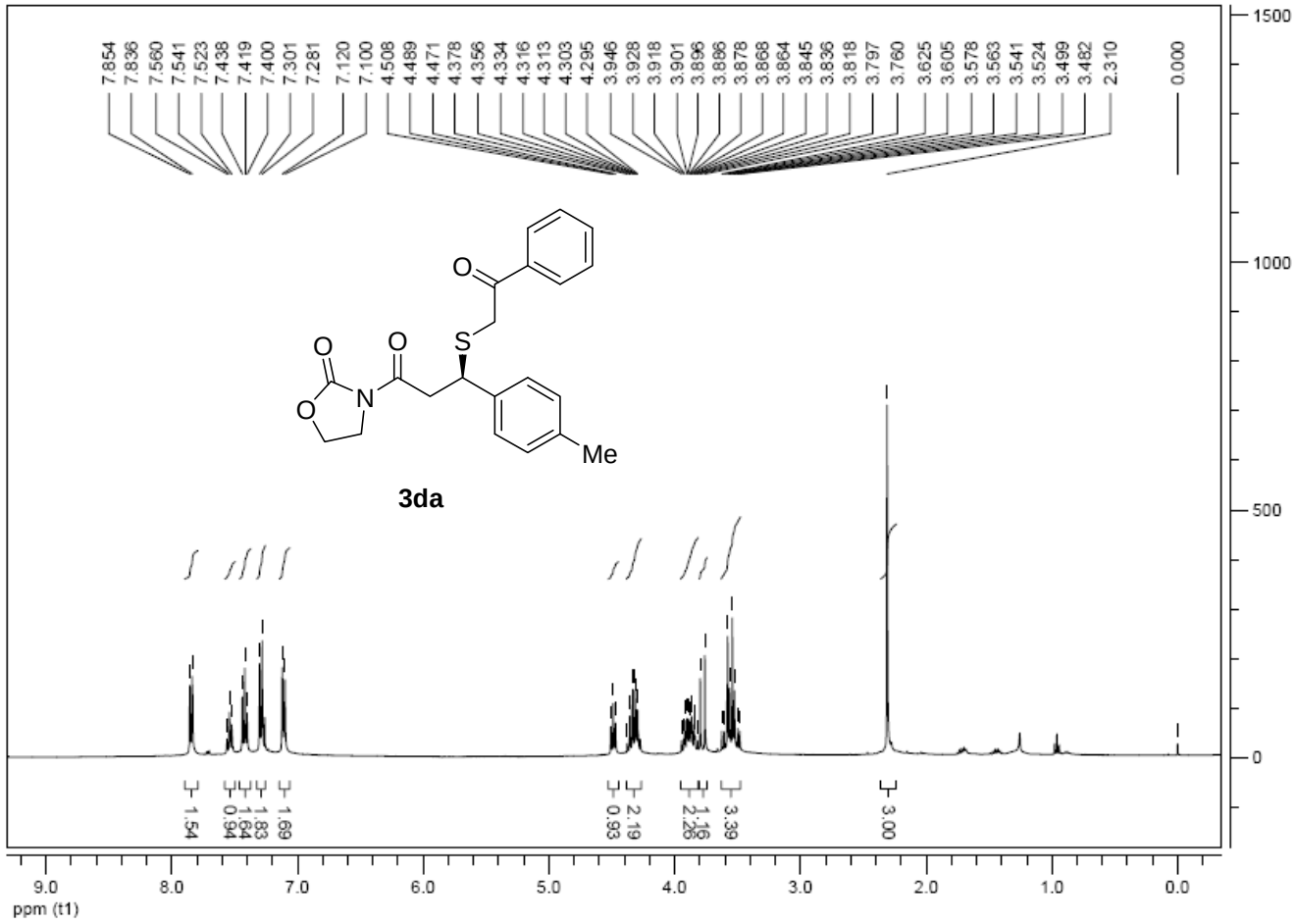
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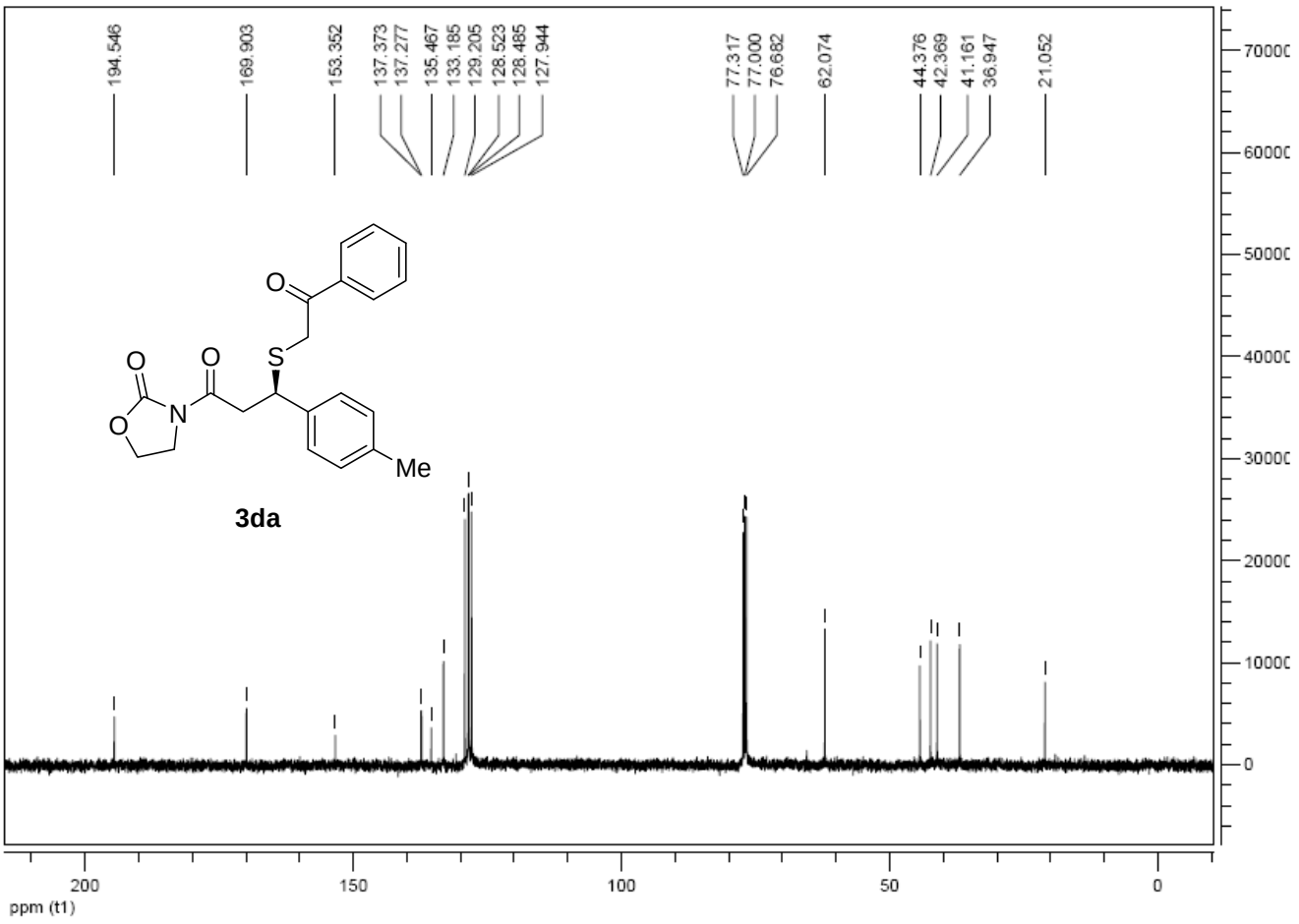
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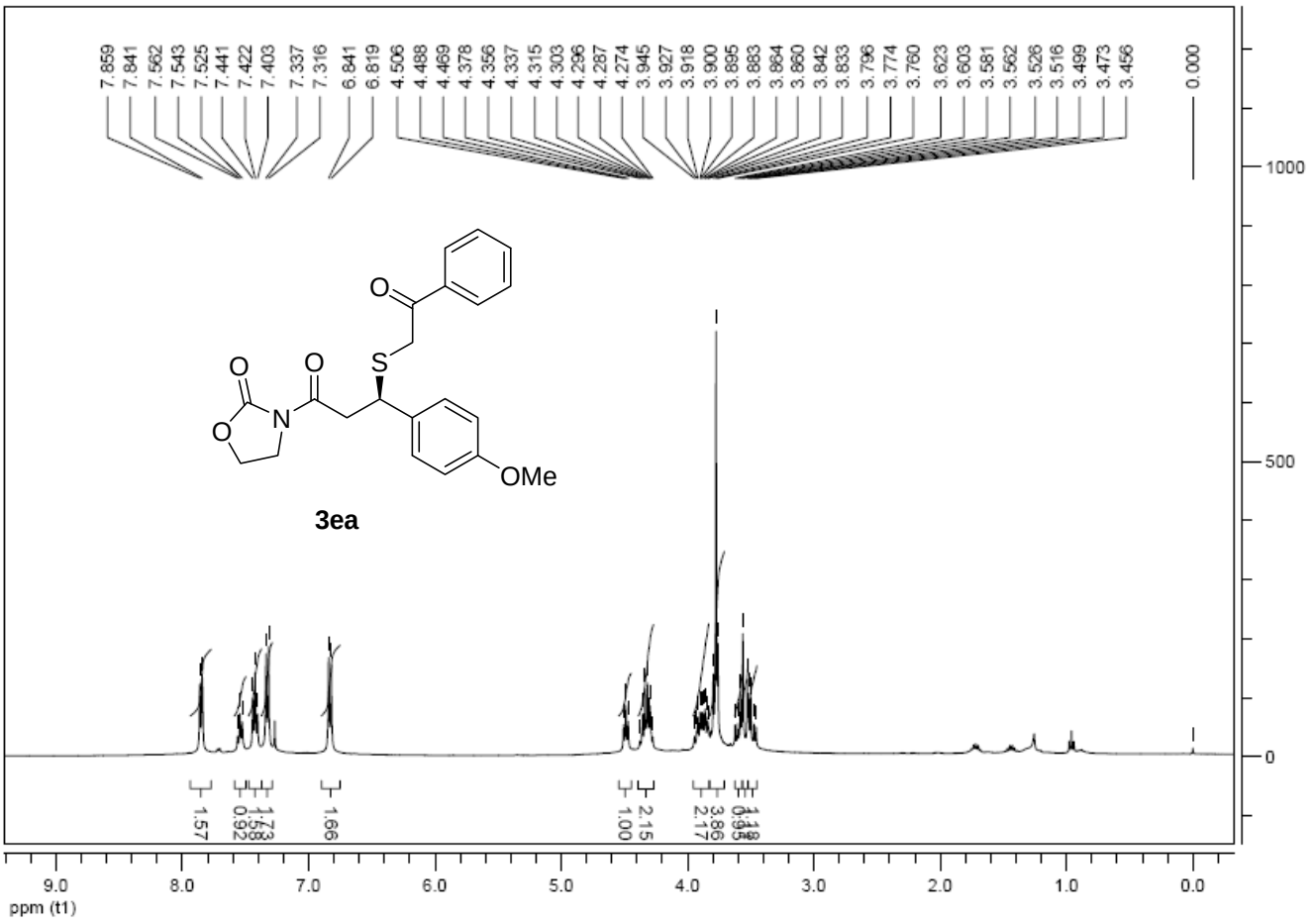
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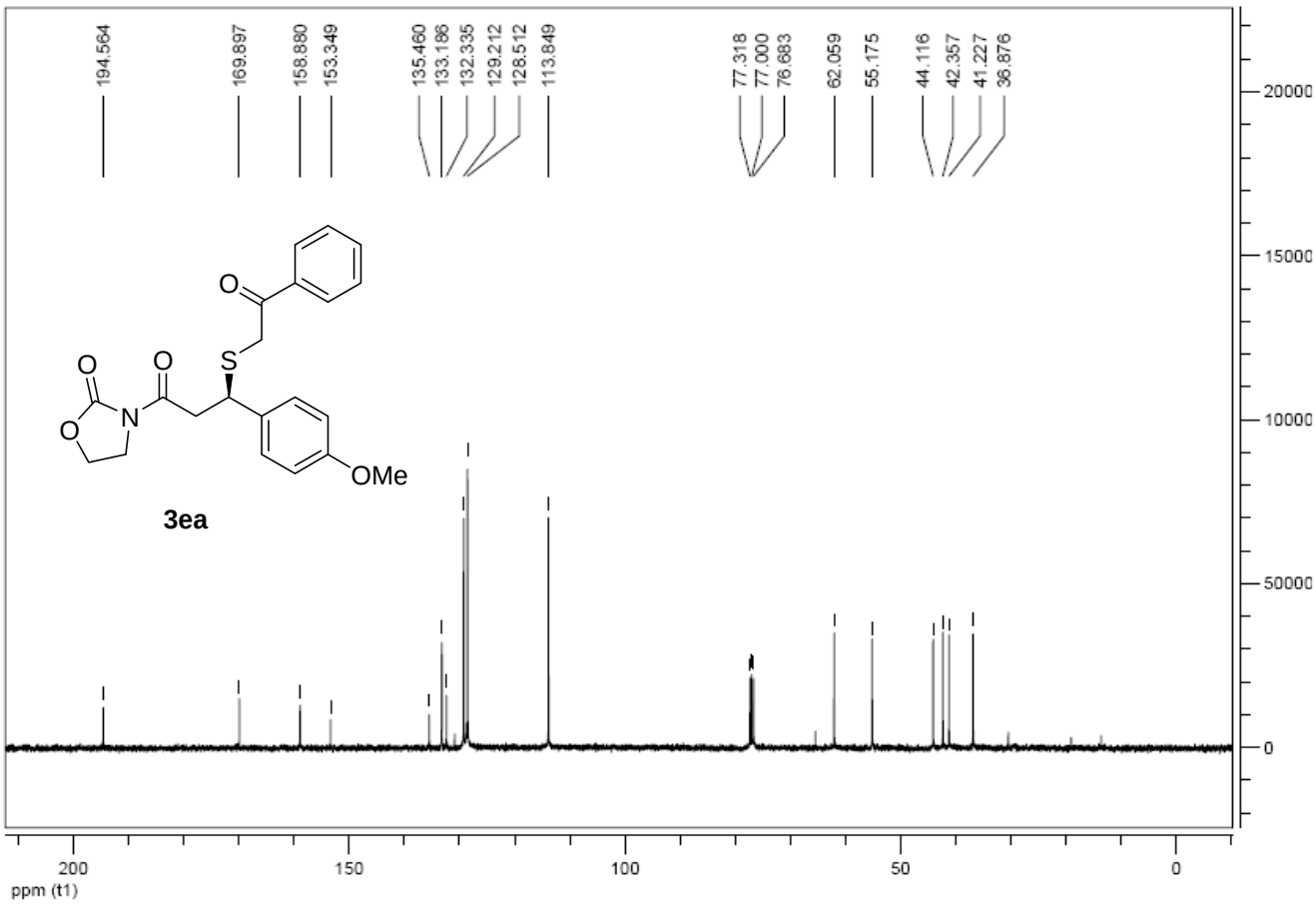
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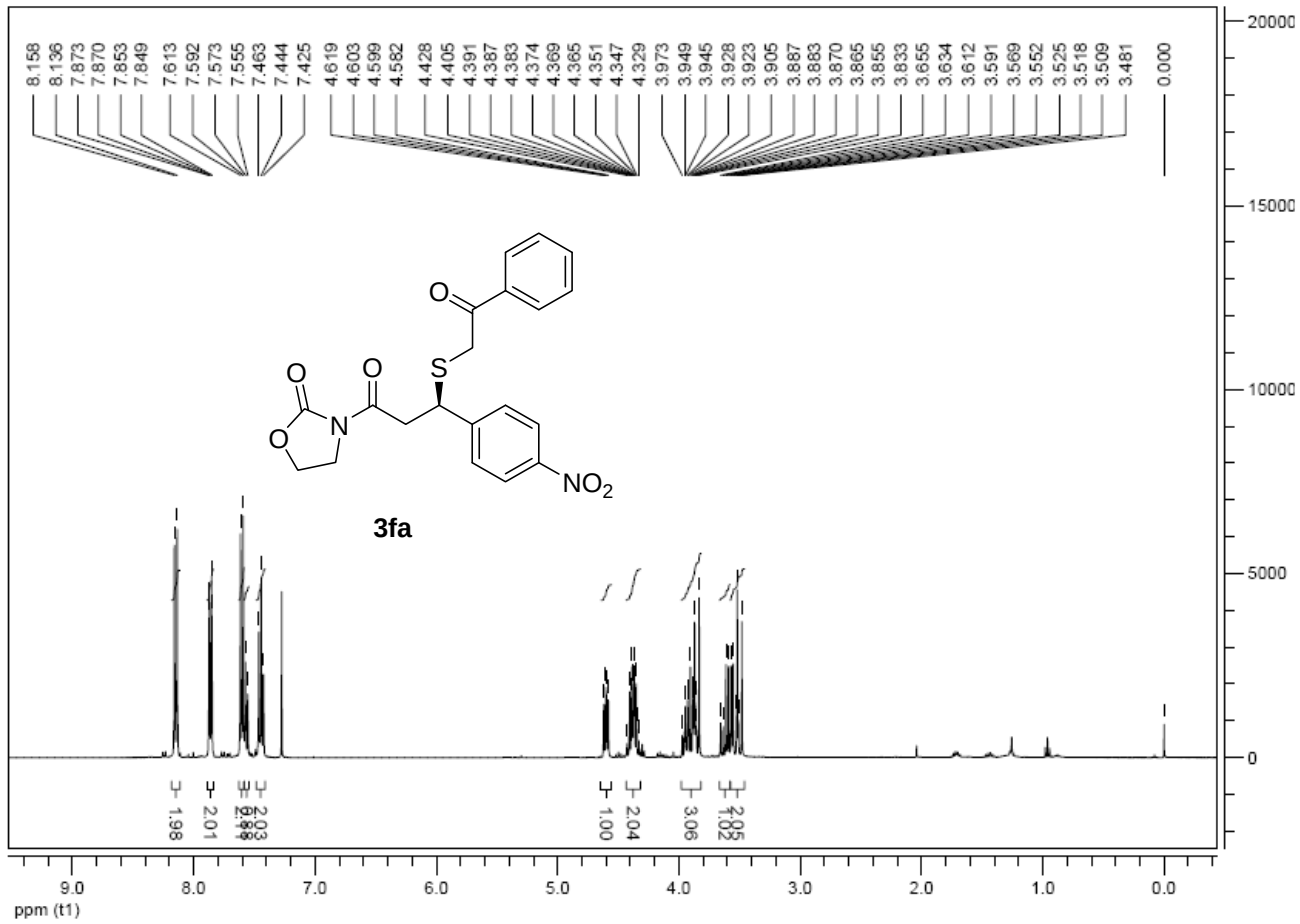
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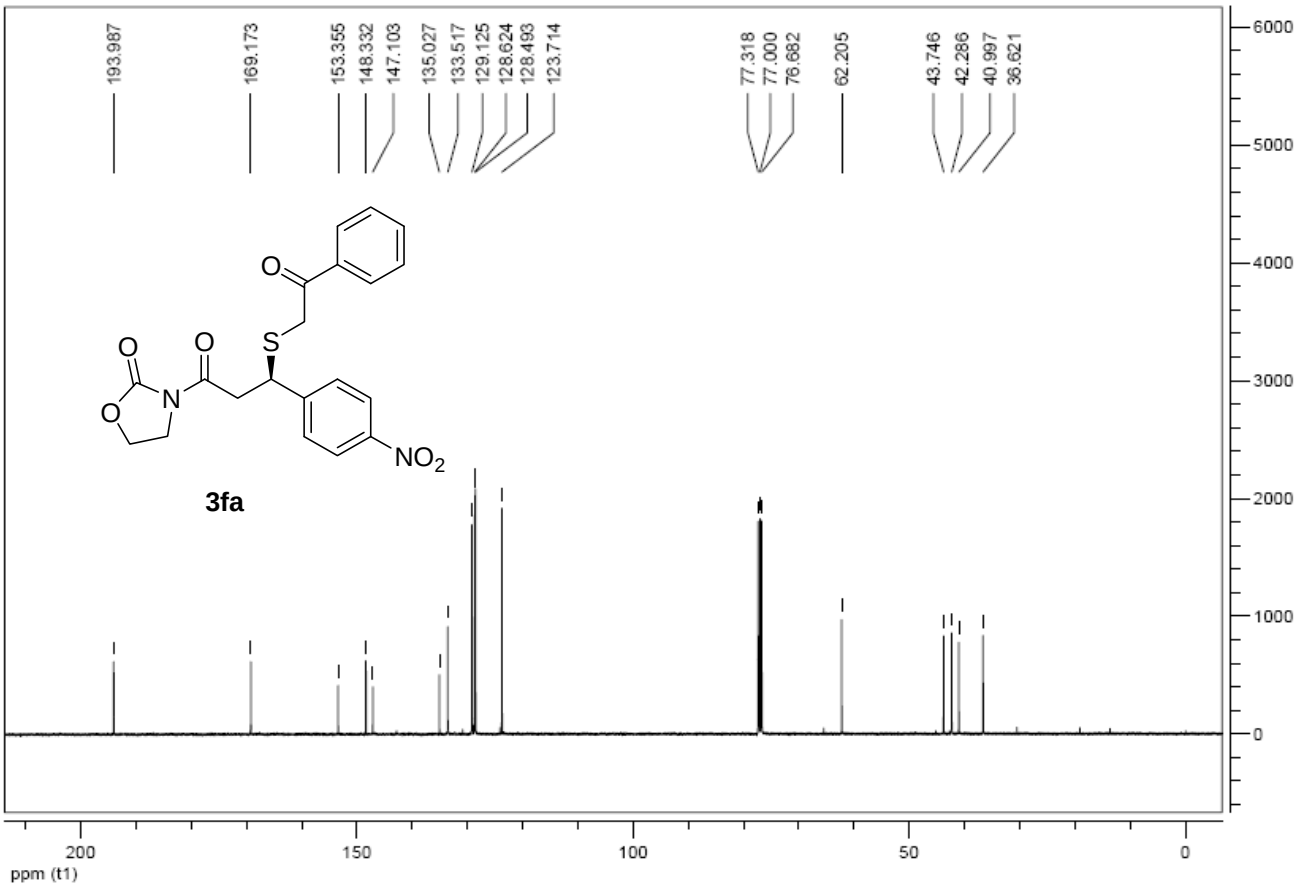
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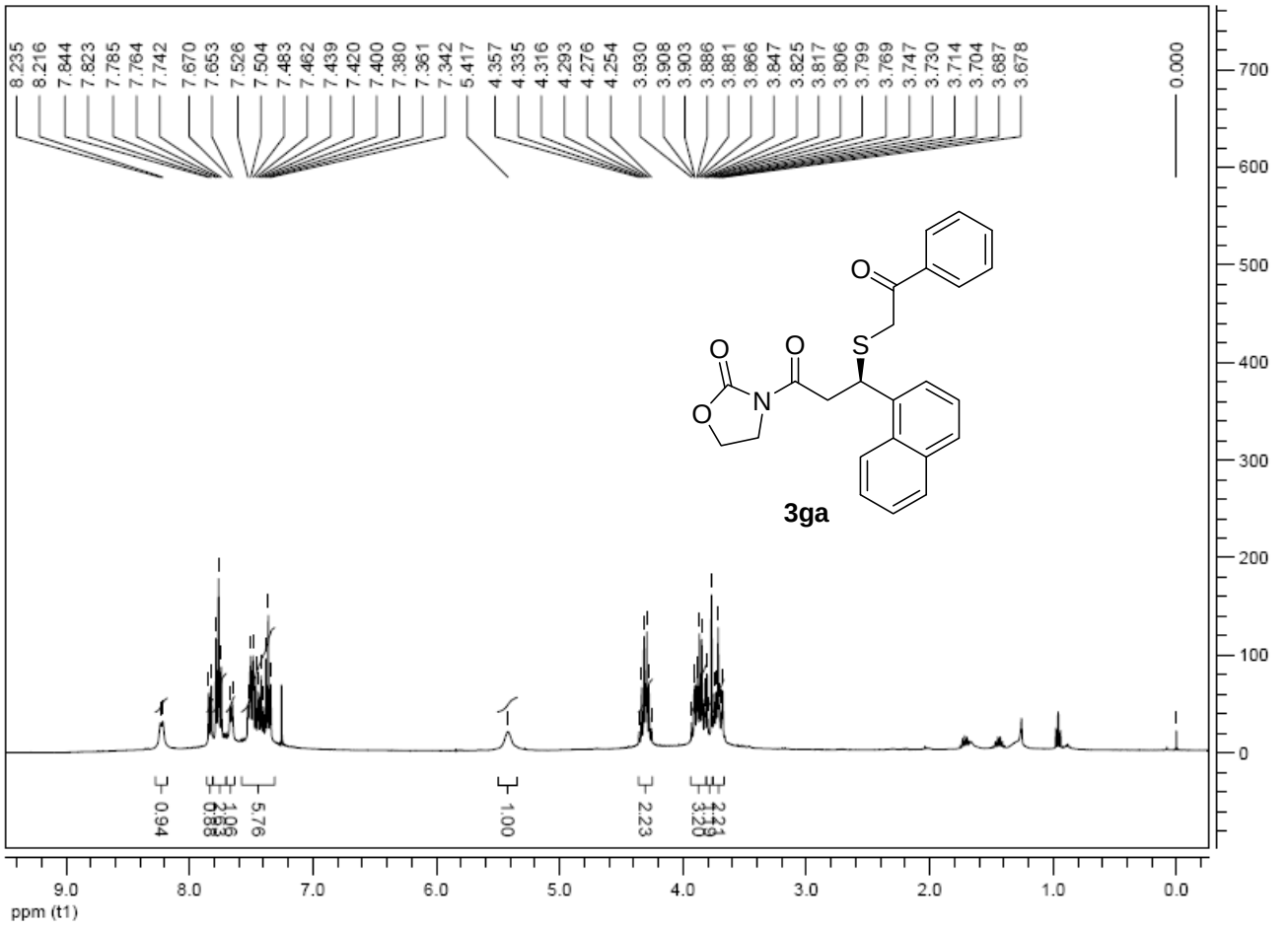
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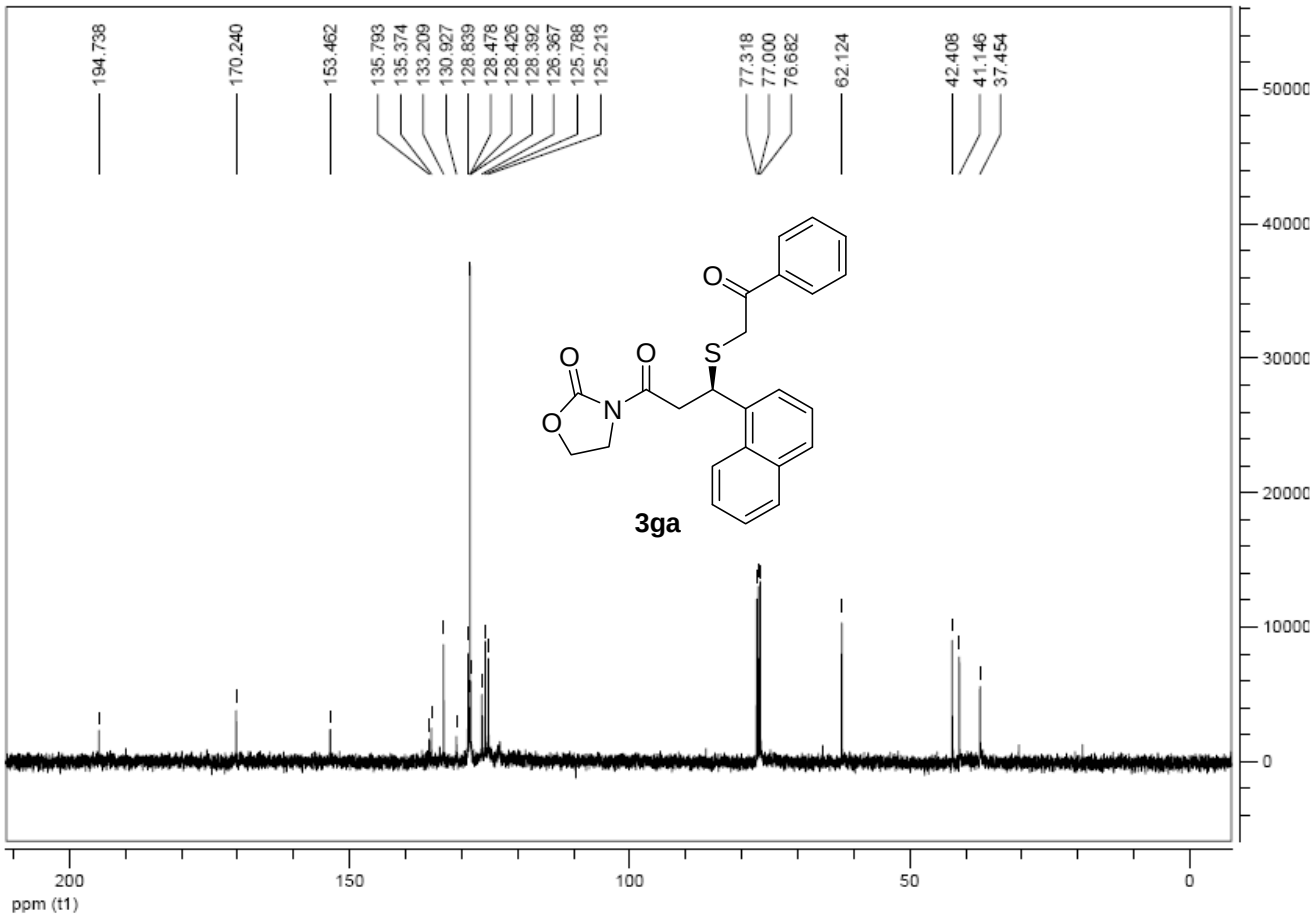
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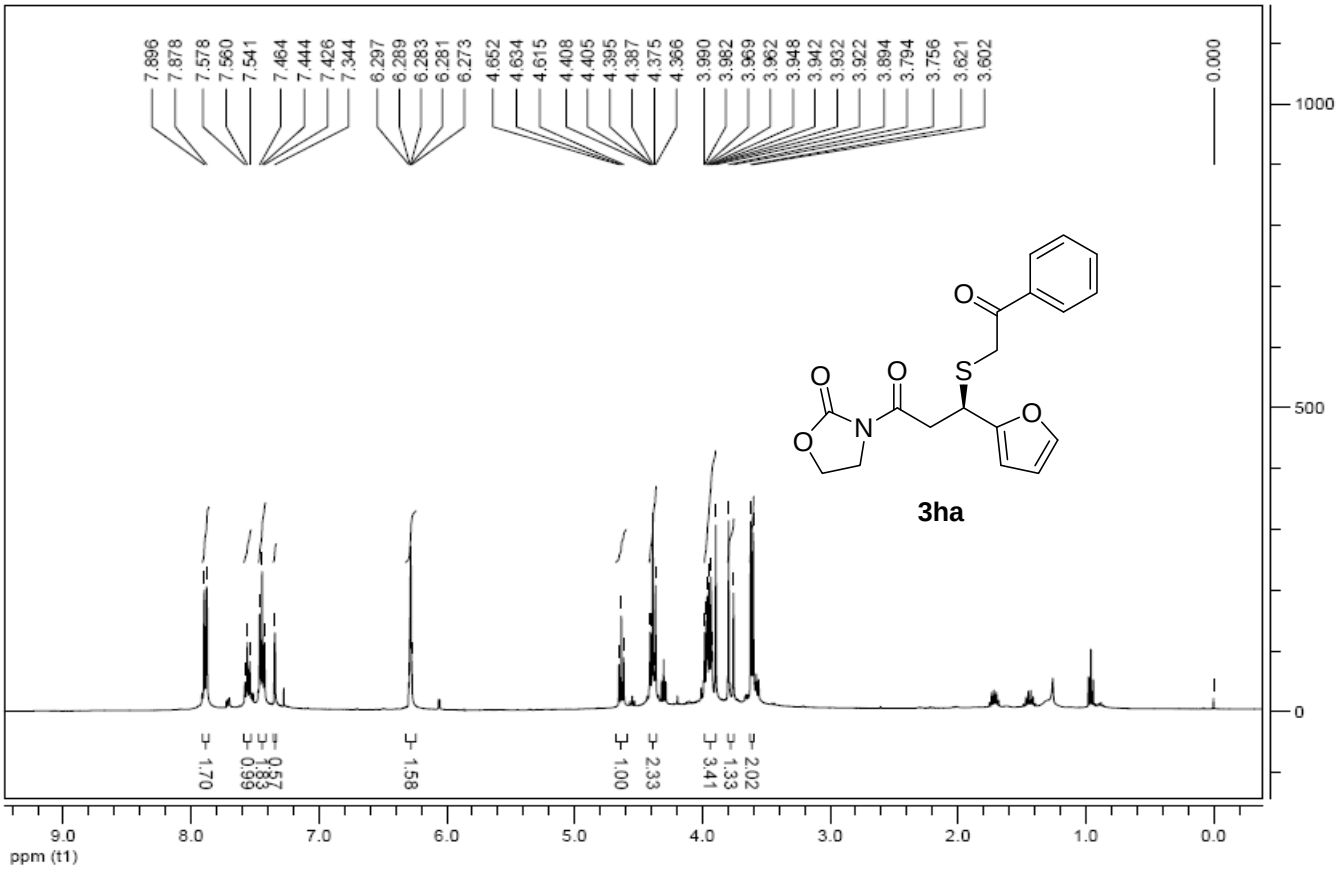
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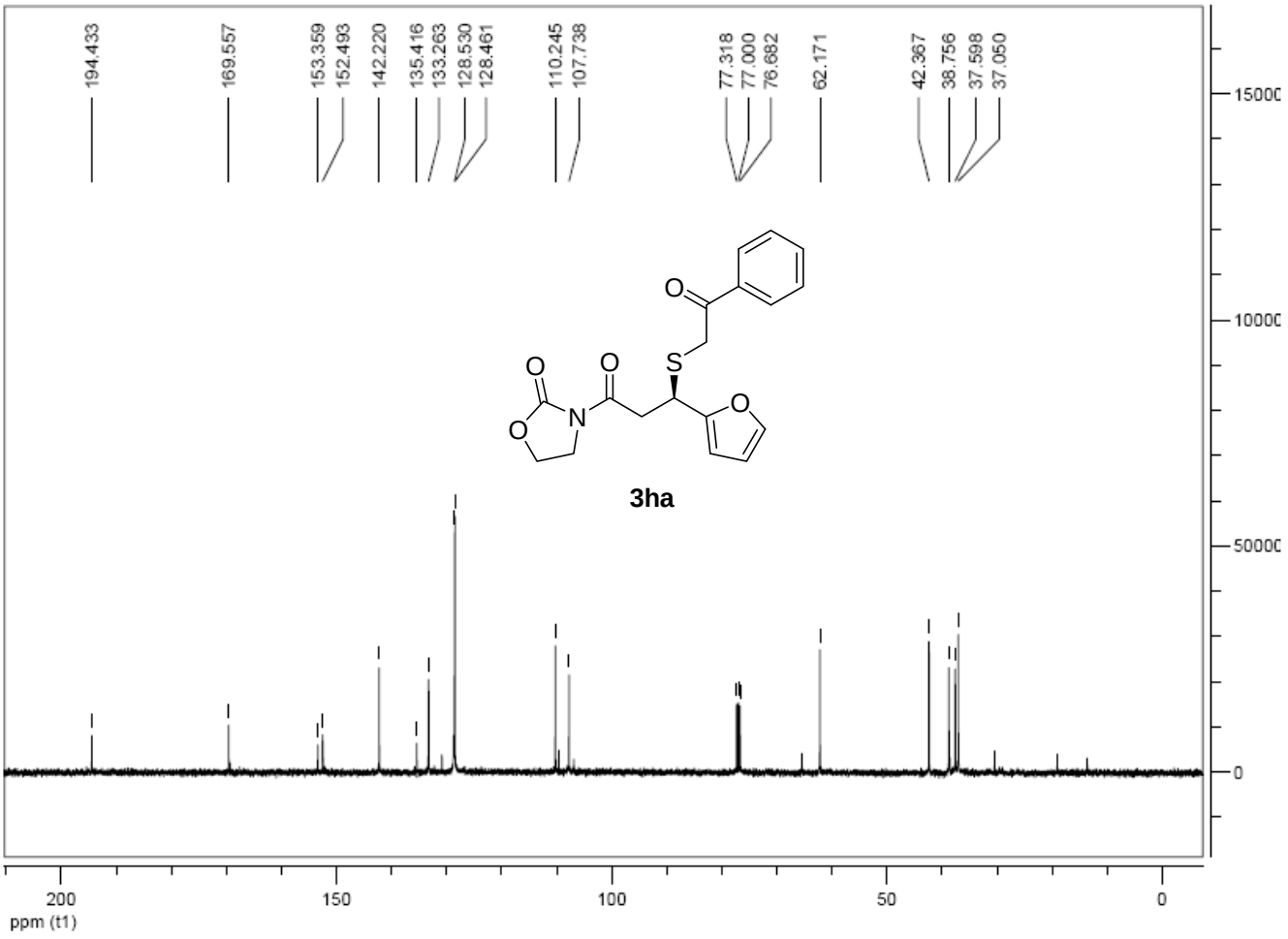
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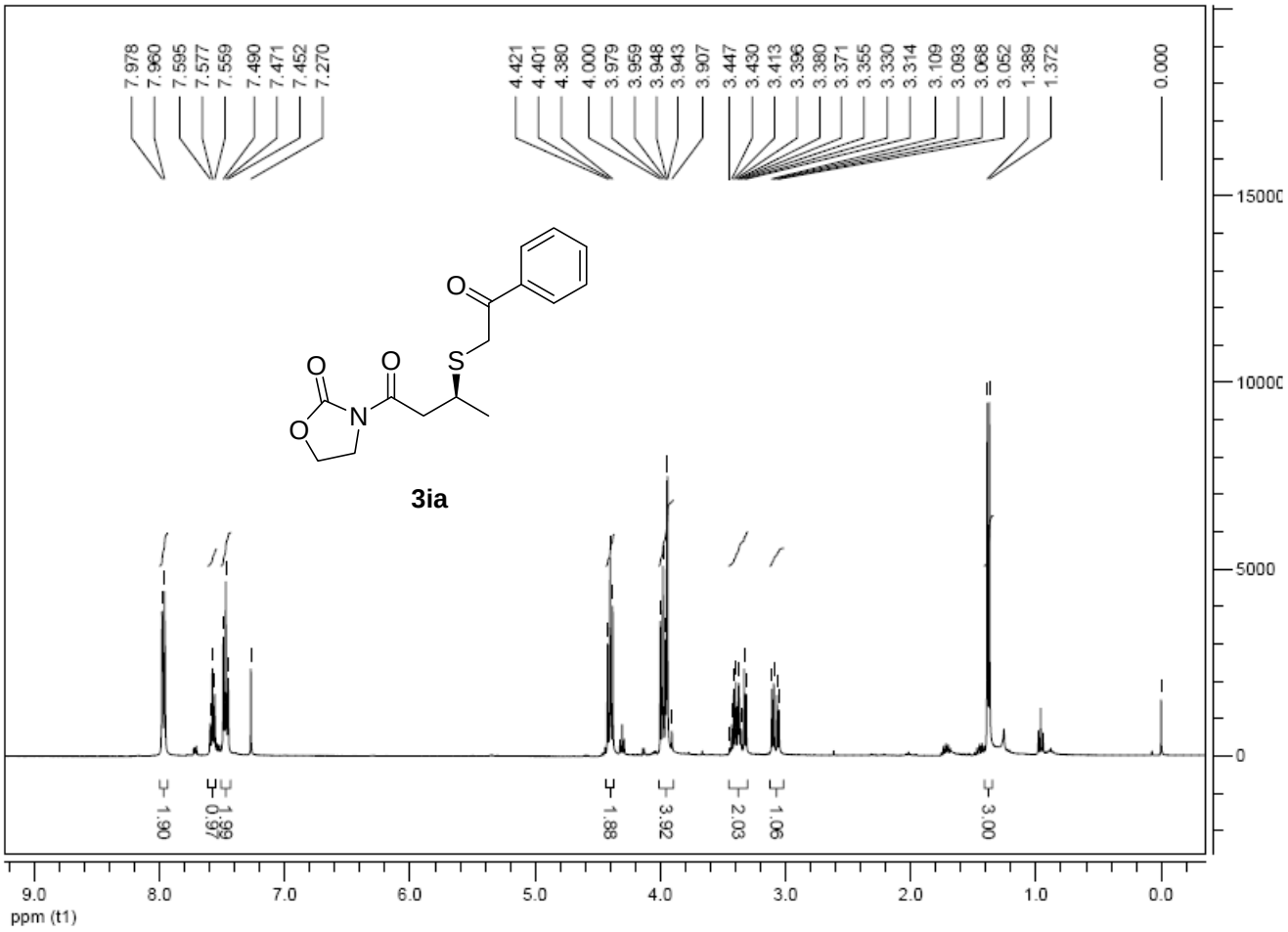
**3ha**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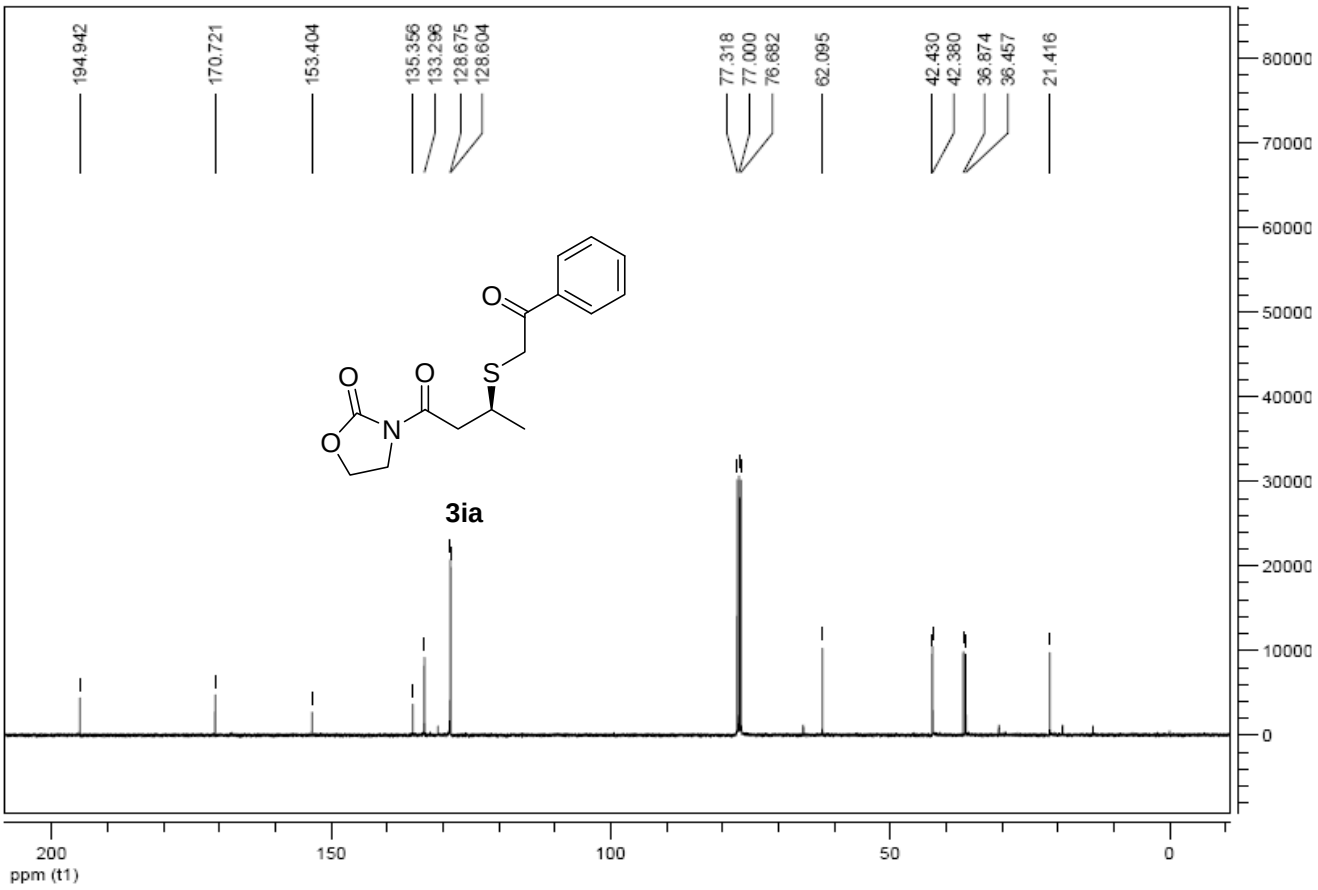
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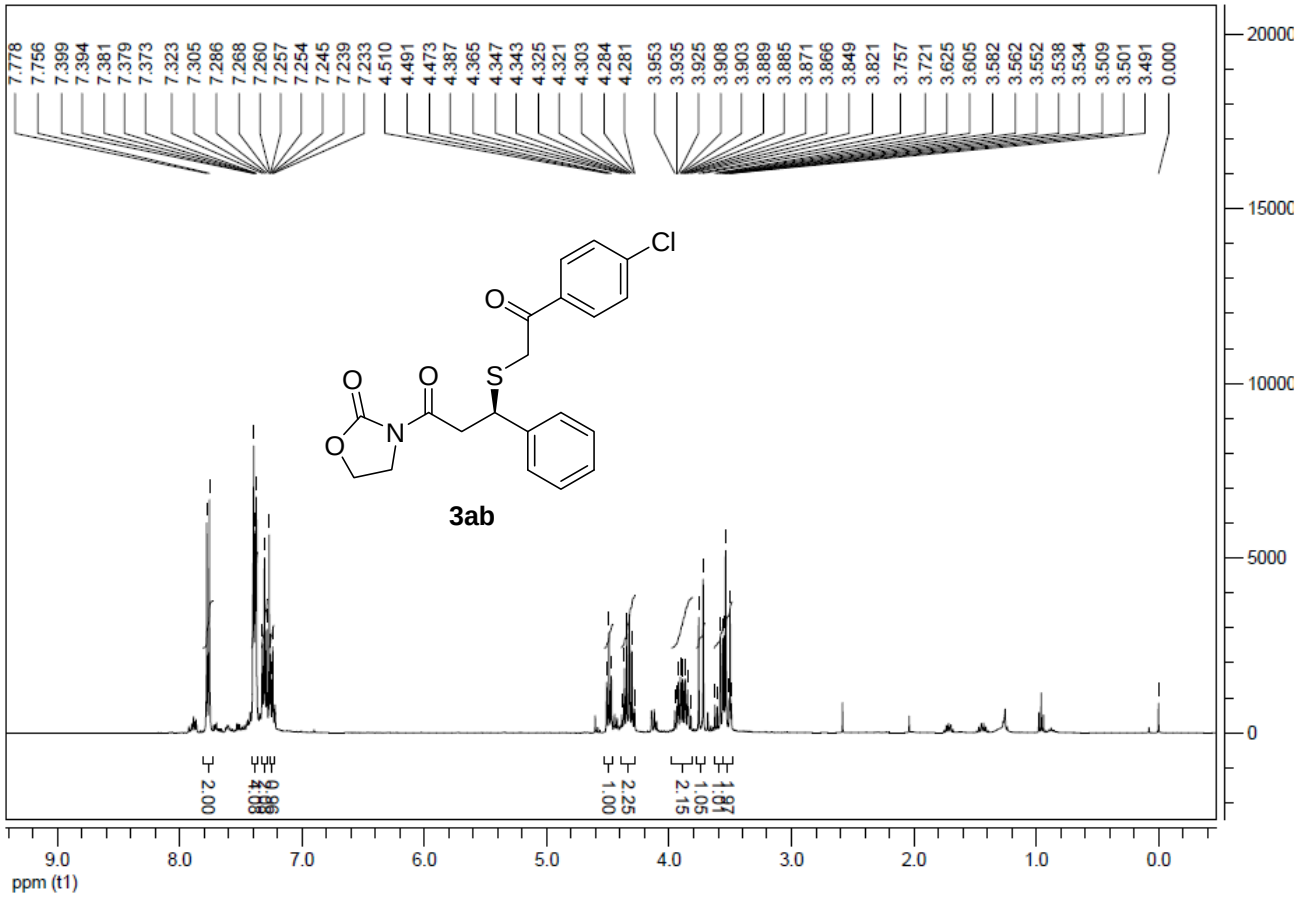
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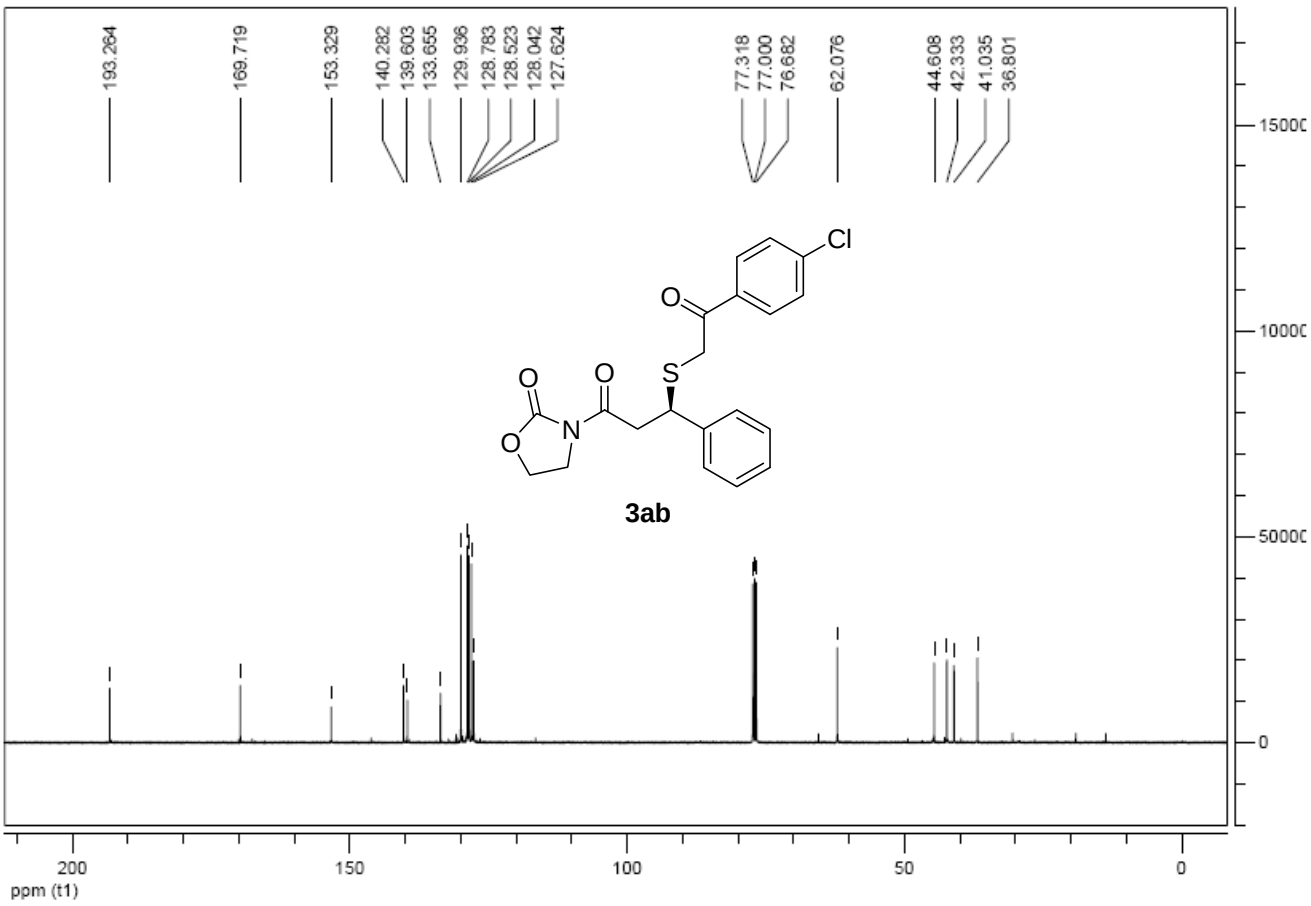
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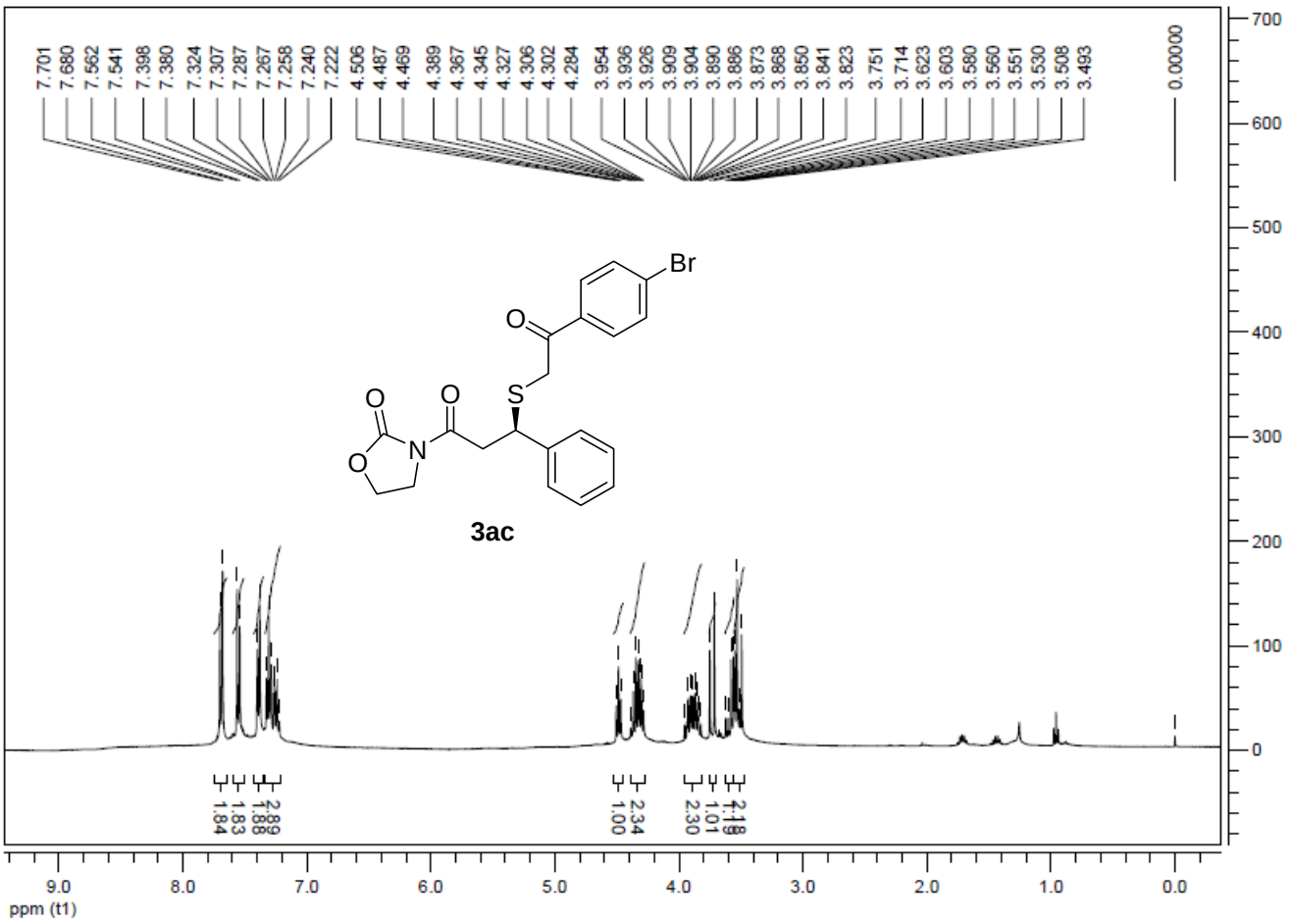
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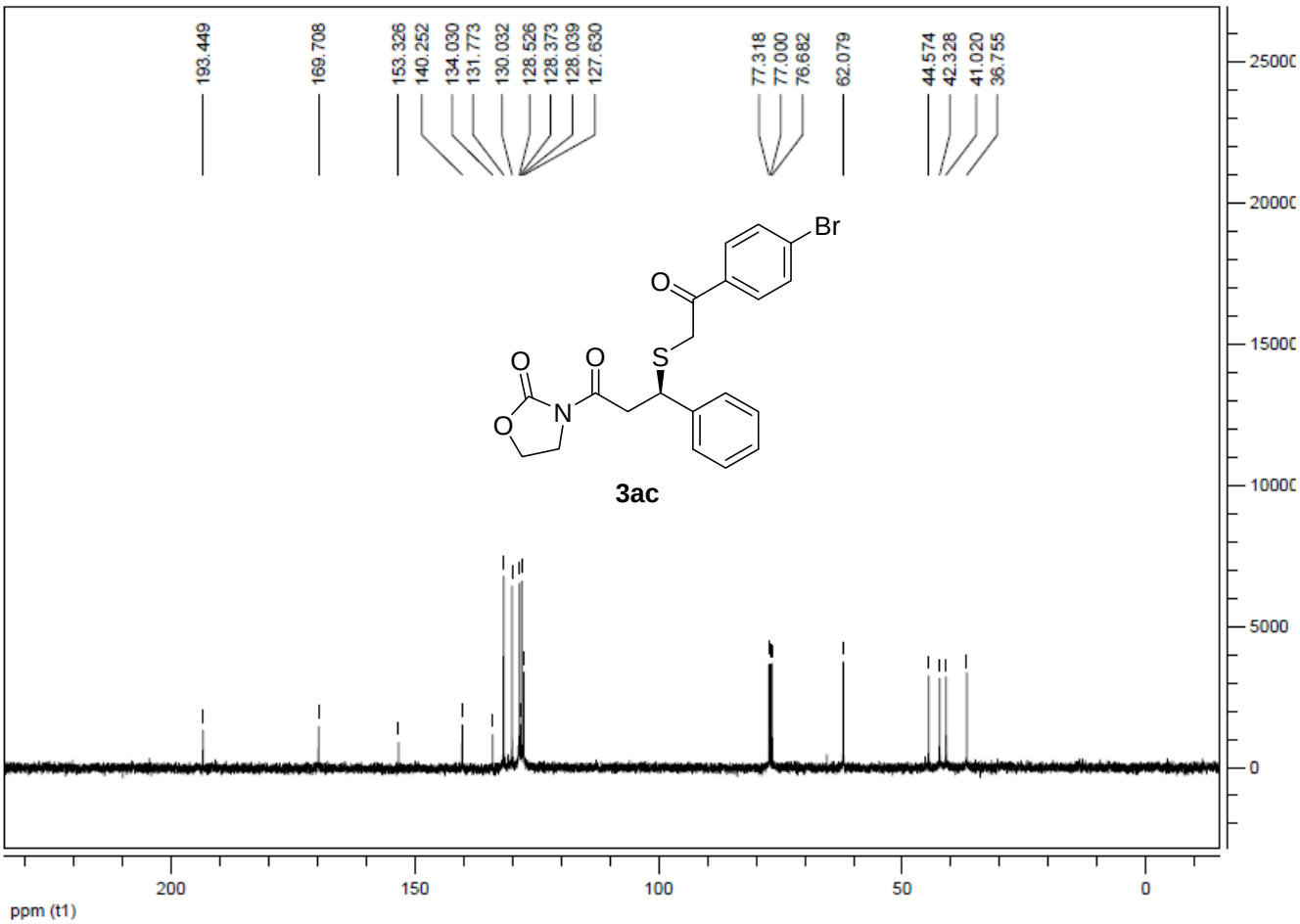
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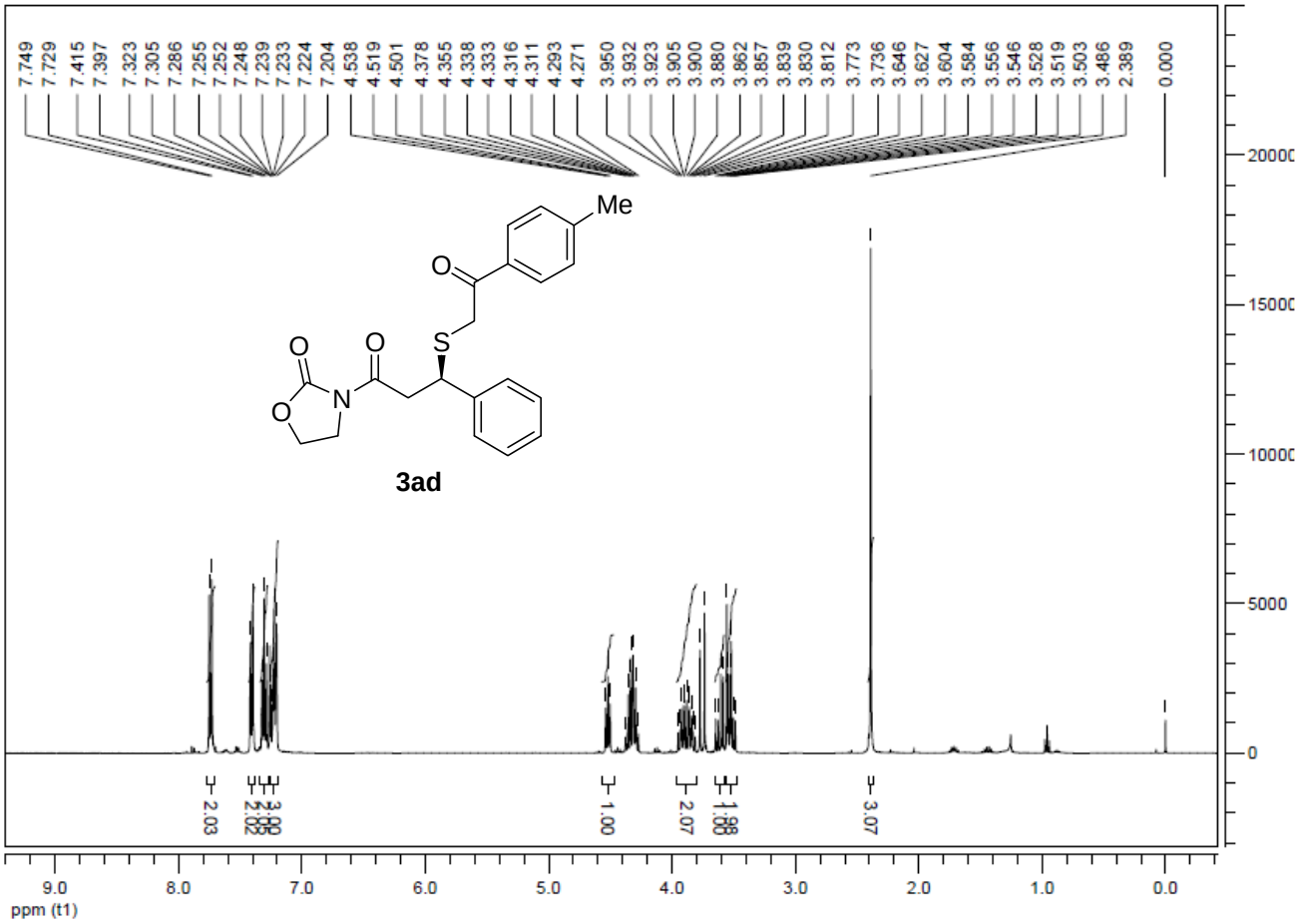
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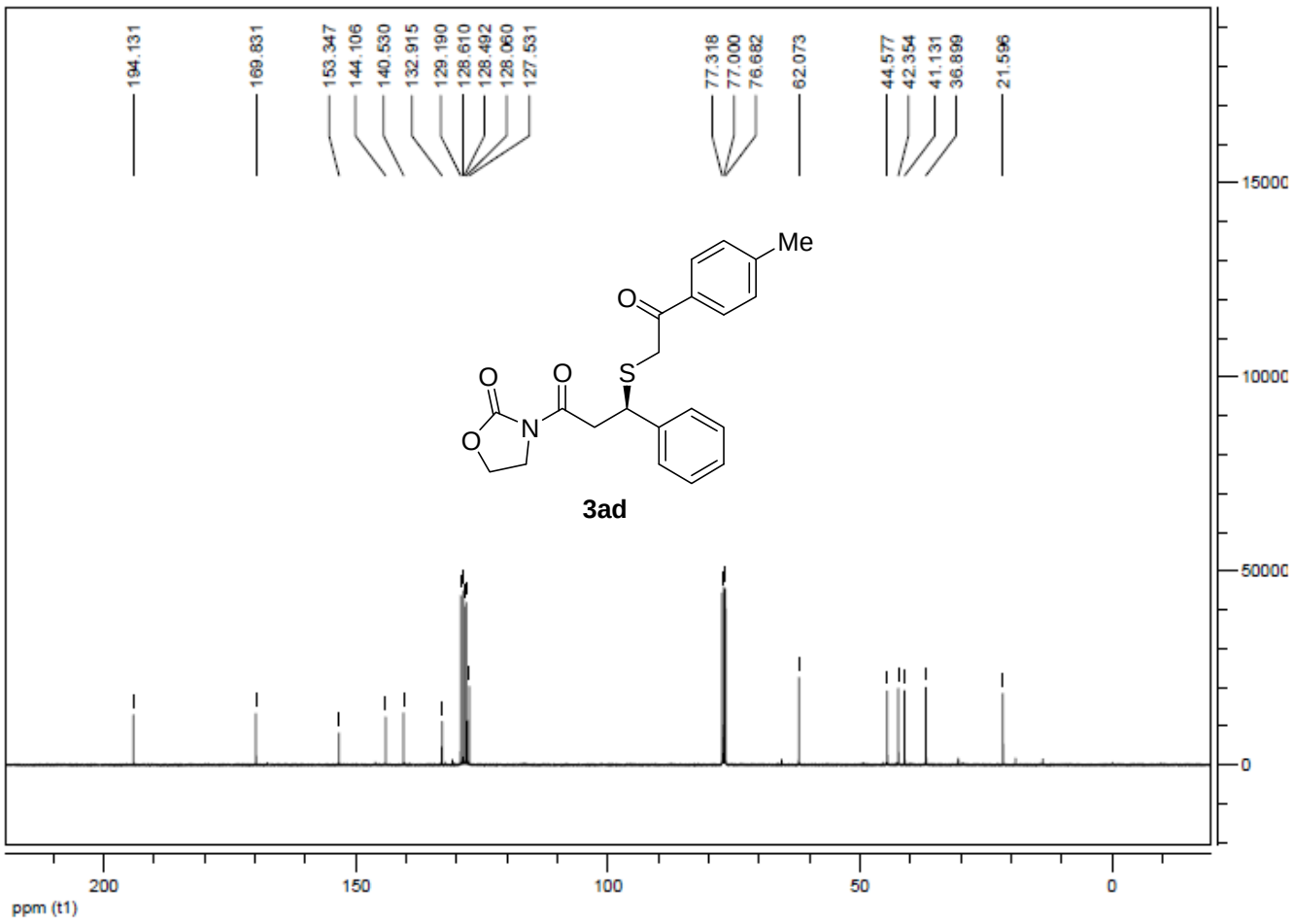
3ad
2.03
2.02
2.00
1.00
2.07
1.00
3.07
20000
15000
10000
5000
0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
ppm (t1)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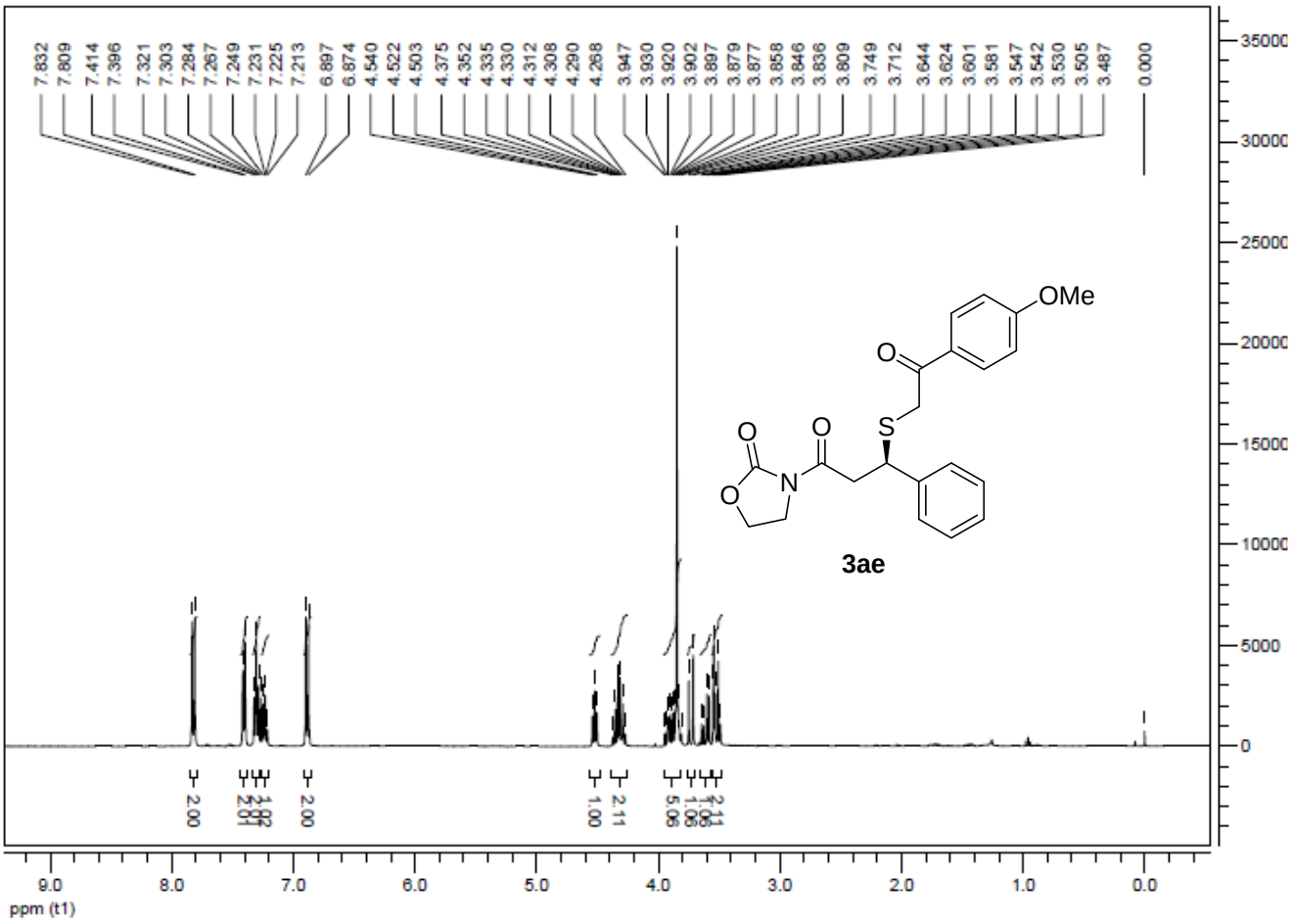
153.347
144.106
140.530
132.915
129.190
128.610
128.492
128.060
127.531
77.318
77.000
76.682
62.073
44.577
42.354
41.131
36.899
21.596
Me
O
S
O
O
N
O
3ad
15000
10000
50000
0
200
150
100
50
0
ppm (t1)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7.267
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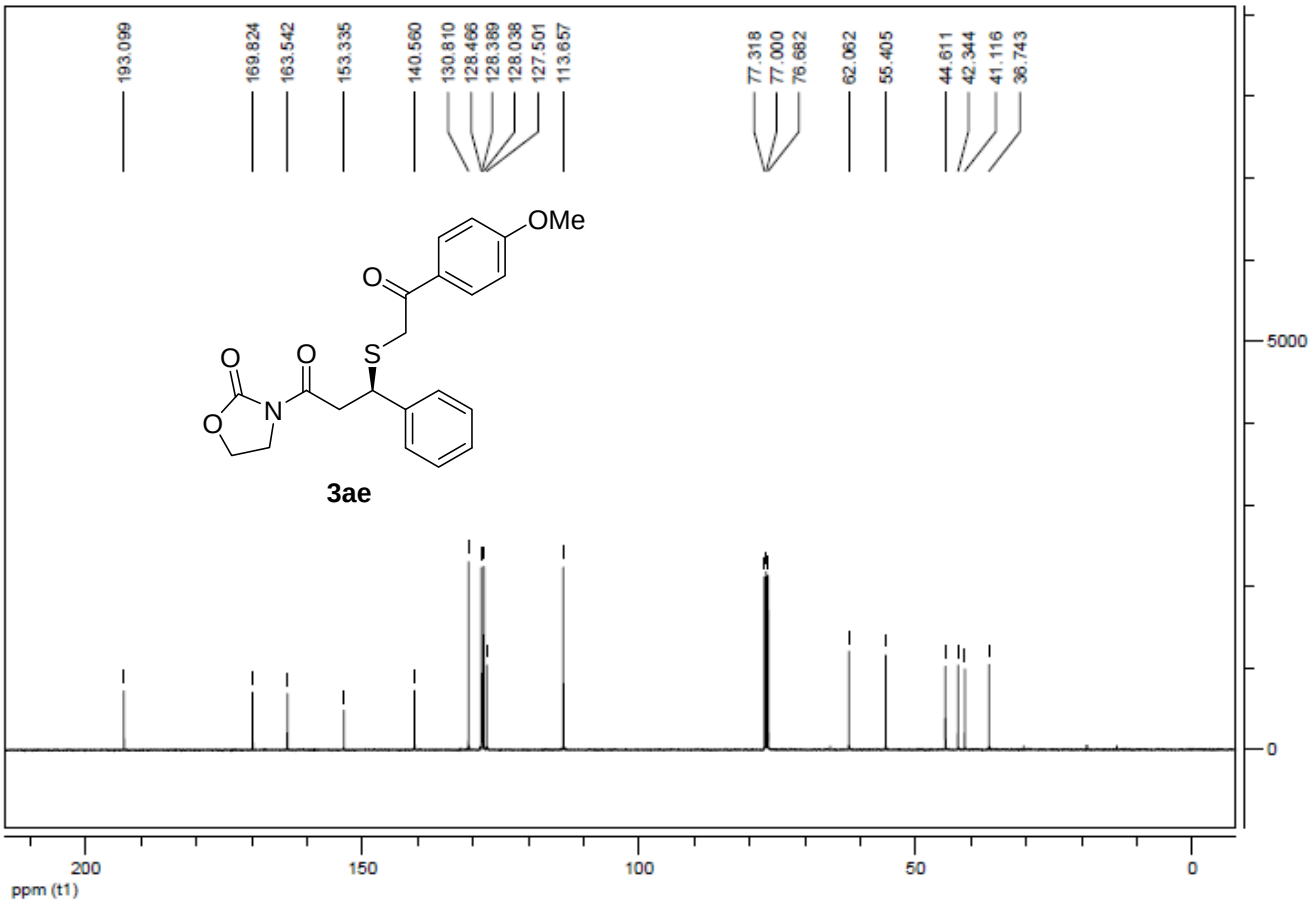
7.231
7.225
7.213
6.897
6.874
4.540
4.522
4.503
4.375
4.352
4.335
4.330
4.312
4.308
4.290
4.268
3.947
3.930
3.920
3.902
3.897
3.879
3.877
3.858
3.846
3.836
3.809
3.749
3.712
3.644
3.624
3.601
3.581
3.547
3.542
3.530
3.505
3.487
0.000
OMe
O
O
S
O
N
O
3ae
2.00
2.01
2.18
2.00
1.00
2.11
5.06
1.06
2.13
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
ppm (t1)
35000
30000
25000
20000
15000
10000
5000
0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163.542
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130.810
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128.389
128.038
127.501
113.657
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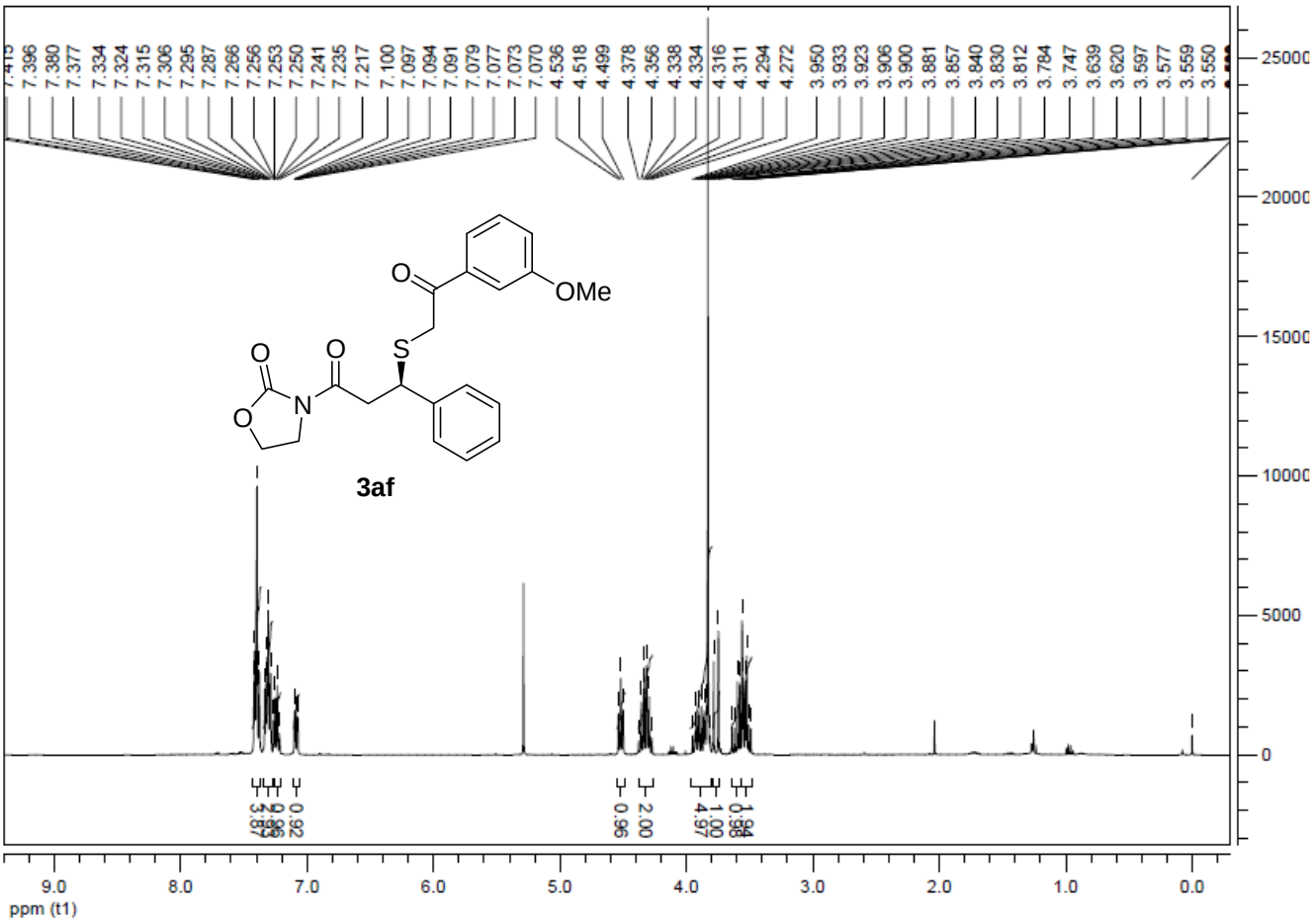
77.000
76.682
62.062
55.405
44.611
42.344
41.116
36.743
OMe
O
O
S
O
N
O
3ae
5000
0
200
150
100
50
0
ppm (t1)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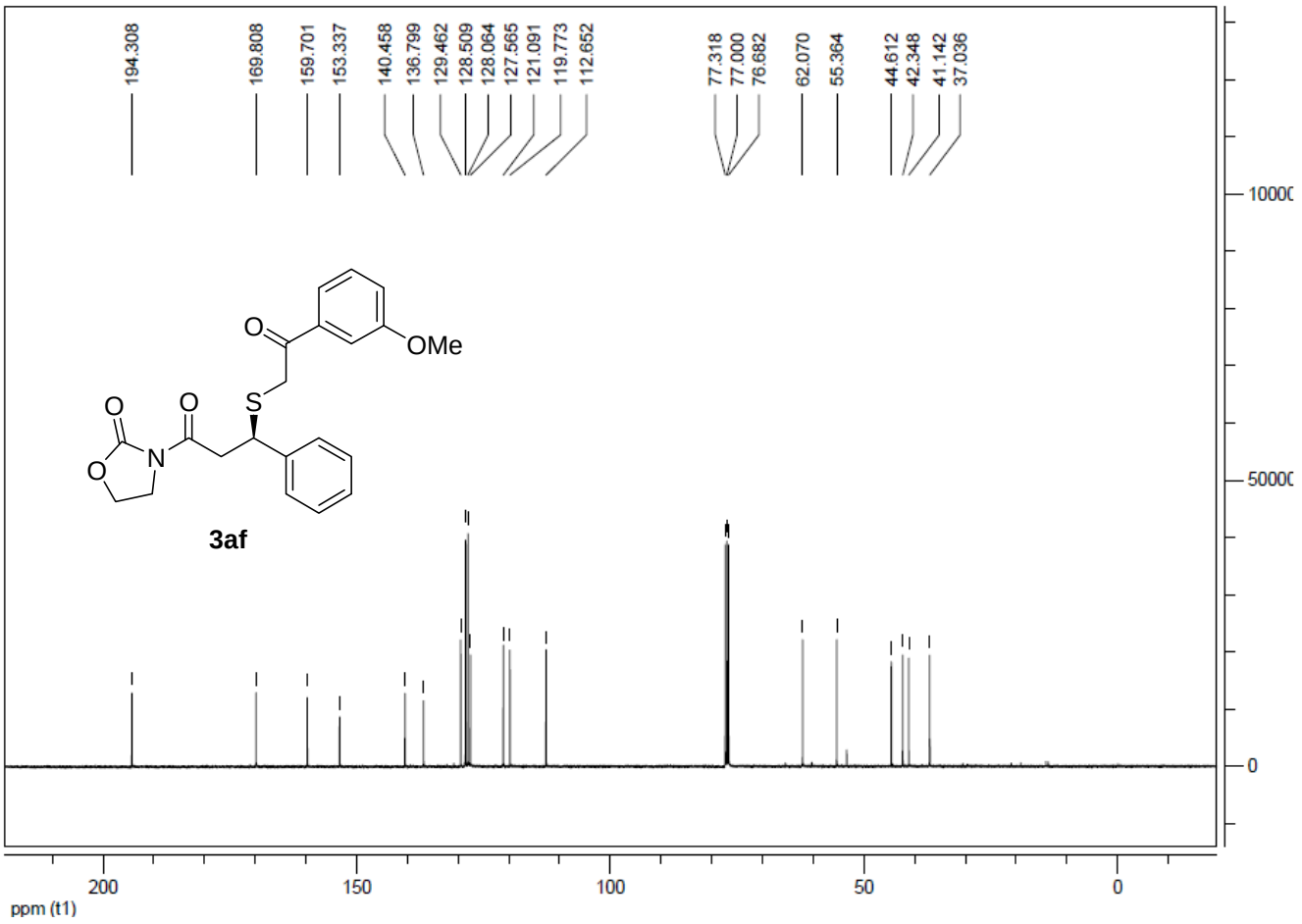
7.306
7.295
7.287
7.266
7.256
7.253
7.250
7.241
7.235
7.217
7.100
7.097
7.094
7.091
7.079
7.077
7.073
7.070
4.536
4.518
4.499
4.378
4.356
4.338
4.334
4.316
4.311
4.294
4.272
3.950
3.933
3.923
3.906
3.900
3.881
3.857
3.840
3.830
3.812
3.784
3.747
3.639
3.620
3.597
3.577
3.559
3.550
O
OMe
O
S
O
O
N
3af
0.92
2.00
0.96
4.97
1.00
1.98
1.94
25000
20000
15000
10000
5000
0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
ppm (t1)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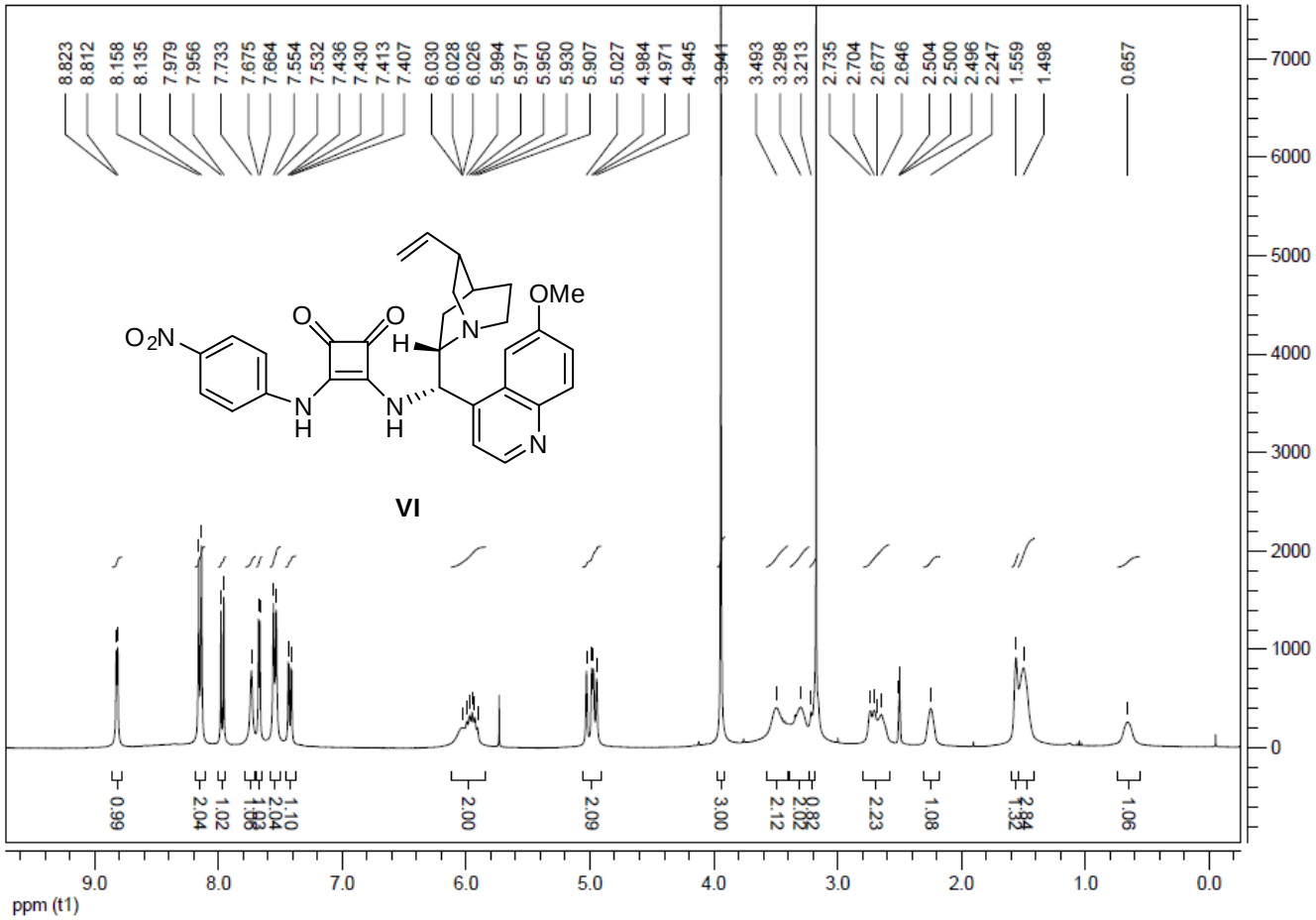
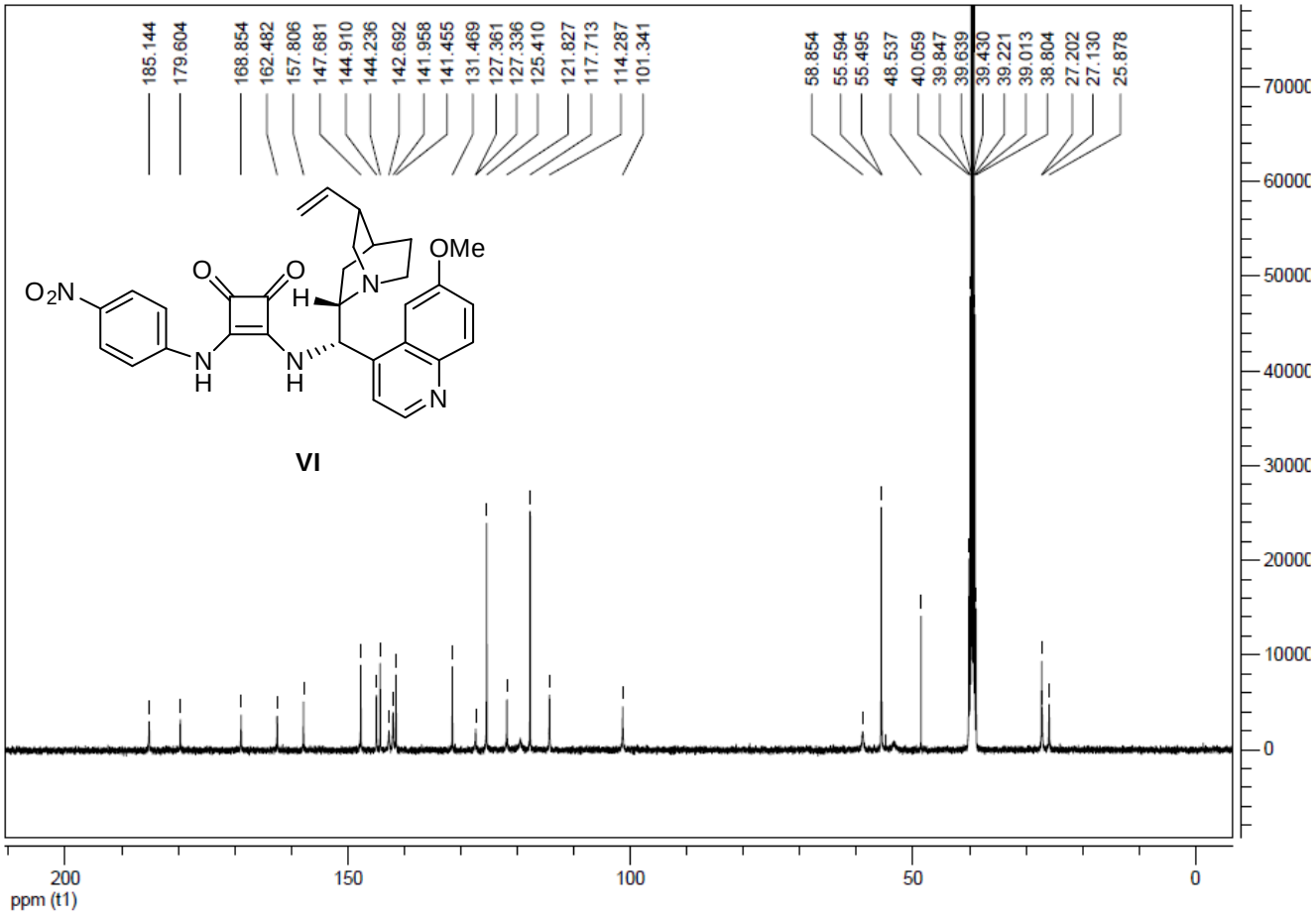
169.808
159.701
153.337
140.458
136.799
129.462
128.509
128.064
127.565
121.091
119.773
112.652
77.318
77.000
76.682
62.070
55.364
44.612
42.348
41.142
37.036
O
OMe
O
S
O
O
N
3af
100000
50000
0
200
150
100
50
0
ppm (t1)


8.823
8.812
8.158
8.135
7.979
7.956
7.733
7.675
7.664
7.554
7.532
7.436
7.430
7.413
7.407
6.030
6.028
6.026
5.994
5.971
5.950
5.930
5.907
5.027
4.984
4.971
4.945
3.941
3.493
3.298
3.213
2.735
2.704
2.677
2.646
2.504
2.500
2.496
2.247
1.559
1.498
0.657
OMe
O2N
O
O
H
N
N
H
N
H
N
VI
0.99
2.04
1.02
1.00
1.00
2.04
1.10
2.00
2.09
3.00
2.12
2.02
2.02
2.23
1.08
2.84
1.06
ppm (t1)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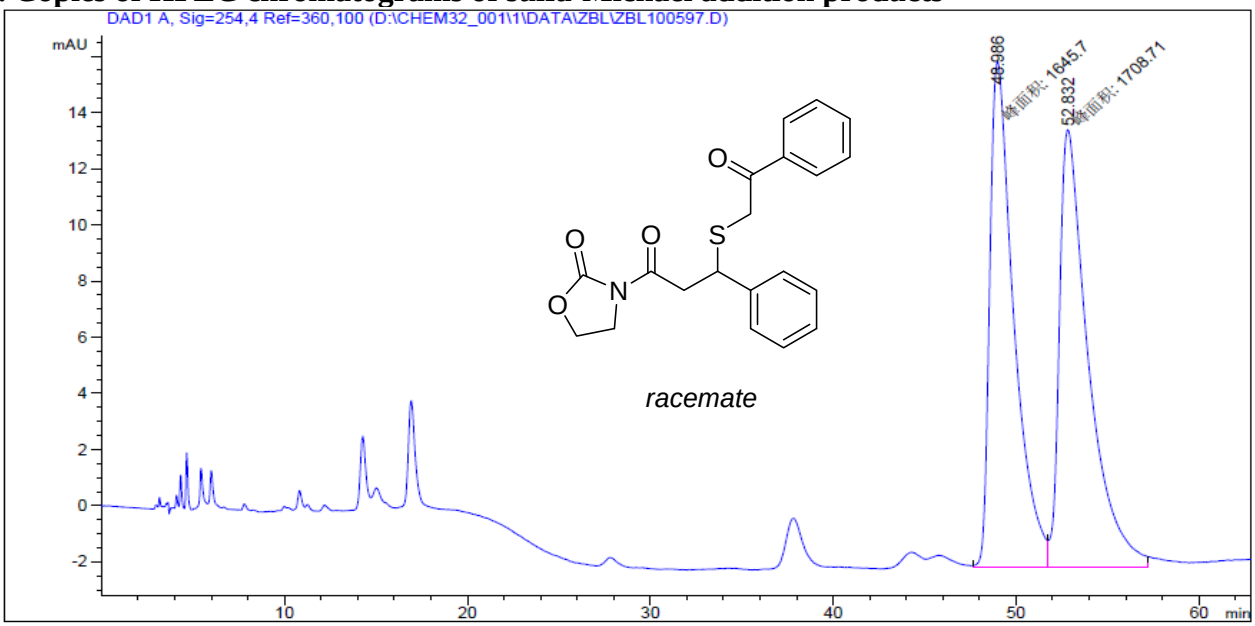
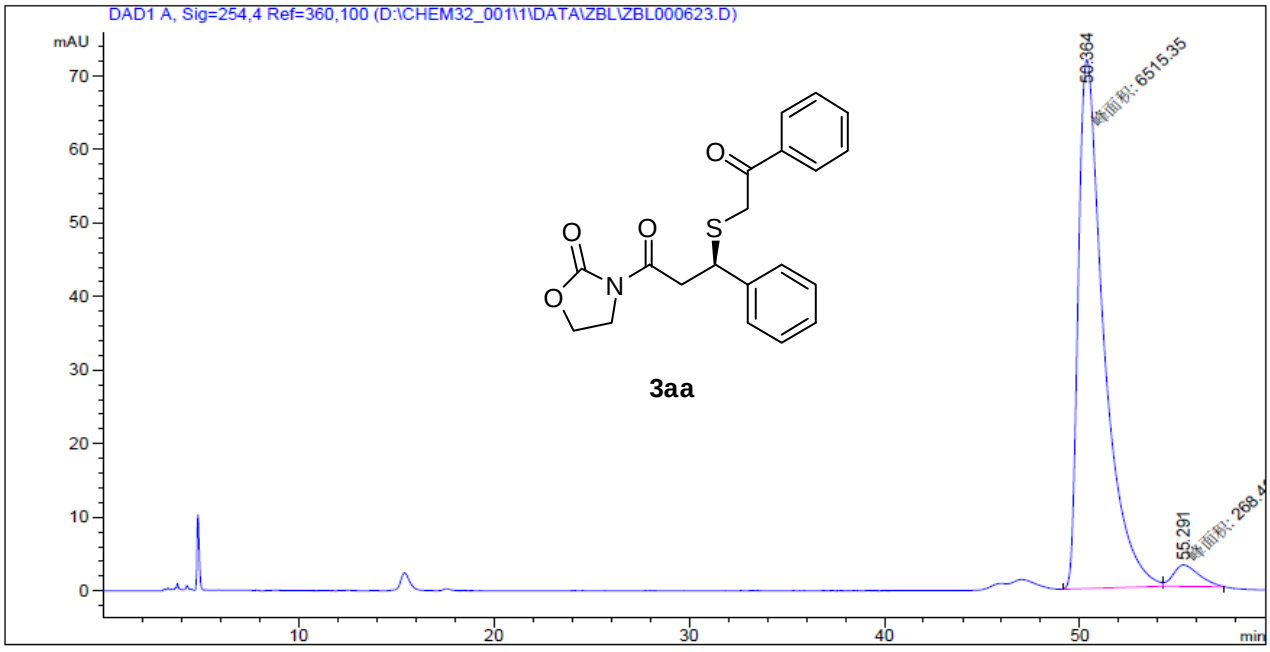
168.854
162.482
157.806
147.681
144.910
144.236
142.692
141.958
141.455
131.469
127.361
127.336
125.410
121.827
117.713
114.287
101.341
58.854
55.594
55.495
48.537
40.059
39.847
39.639
39.430
39.221
39.013
38.804
27.202
27.130
25.878
OMe
O2N
O
O
H
N
N
H
N
H
N
VI
ppm (t1)

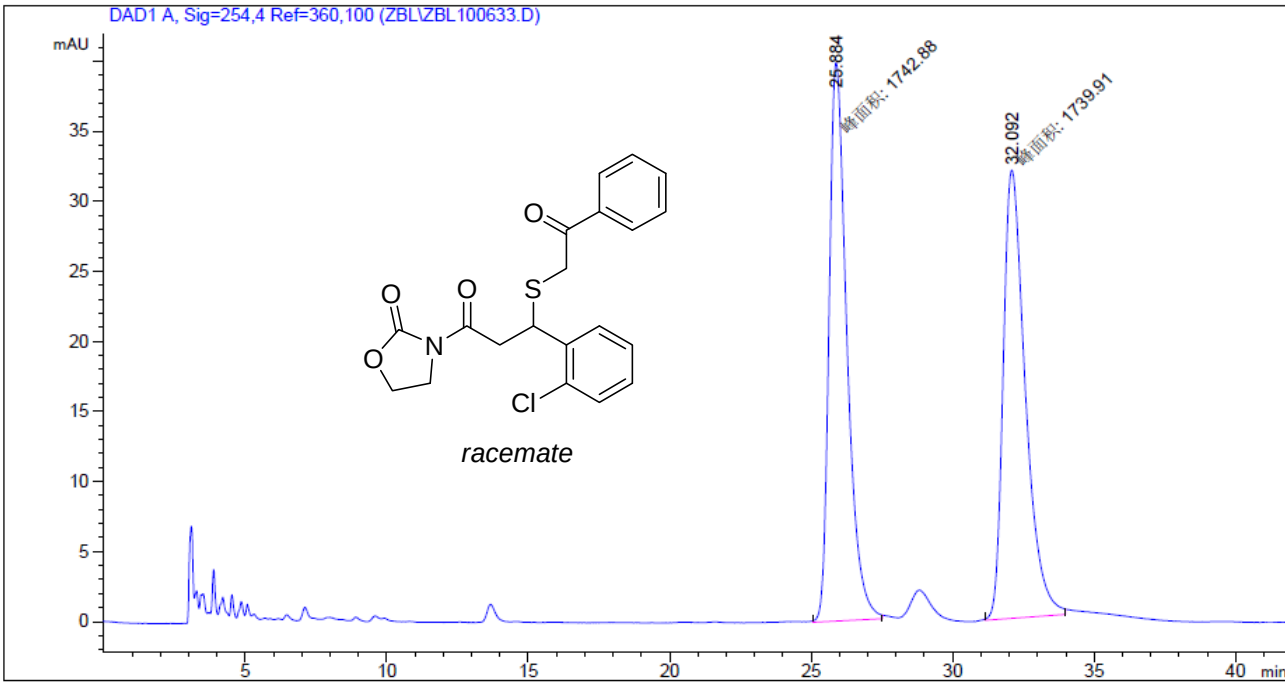
## 2. Copies of HPLC chromatograms of sulfa-Michael addition products



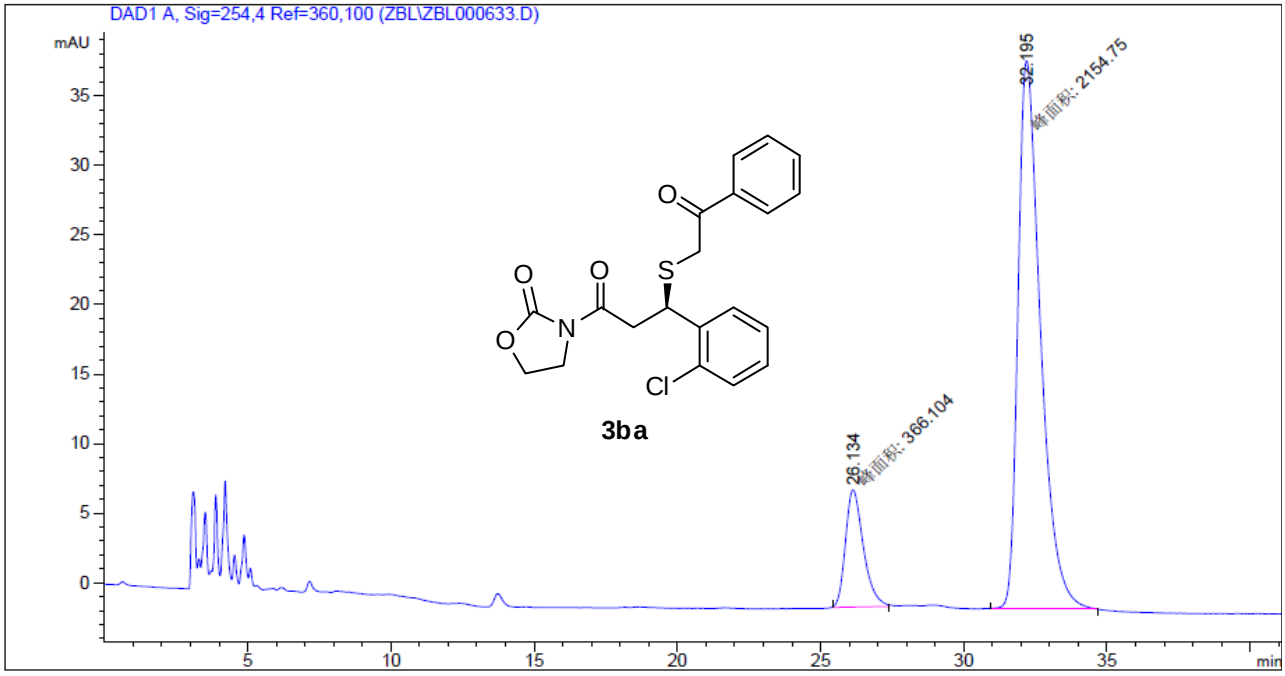

| Peak # | RetTime [min] | Type | Width [min] | Area [mAU*s] | Height [mAU] | Area % |
|---|---|---|---|---|---|---|
| 1 | 48.986 | MM | 1.5248 | 1645.69617 | 17.98802 | 49.0607 |
| 2 | 52.832 | MM | 1.8293 | 1708.70923 | 15.56781 | 50.9393 |



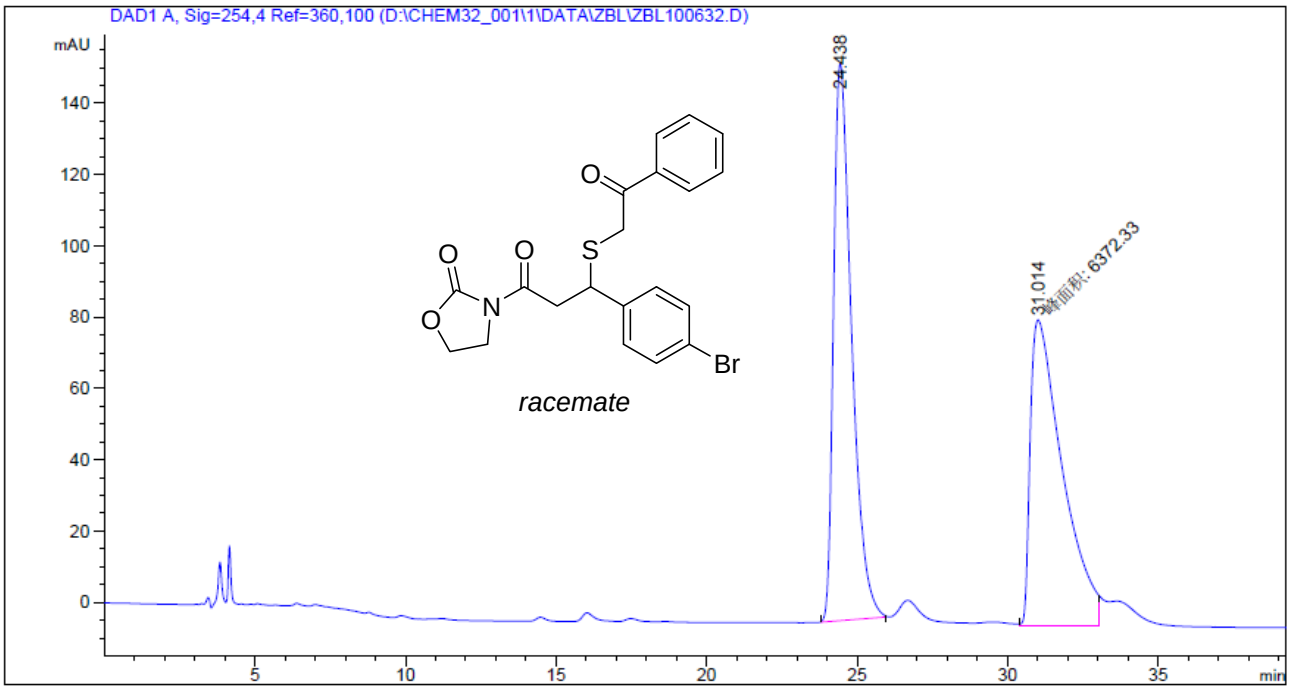

| Peak # | RetTime [min] | Type | Width [min] | Area [mAU*s] | Height [mAU] | Area % |
|---|---|---|---|---|---|---|
| 1 | 50.364 | MM | 1.5105 | 6515.35400 | 71.89027 | 96.0434 |
| 2 | 55.291 | MM | 1.5384 | 268.40698 | 2.90779 | 3.9566 |



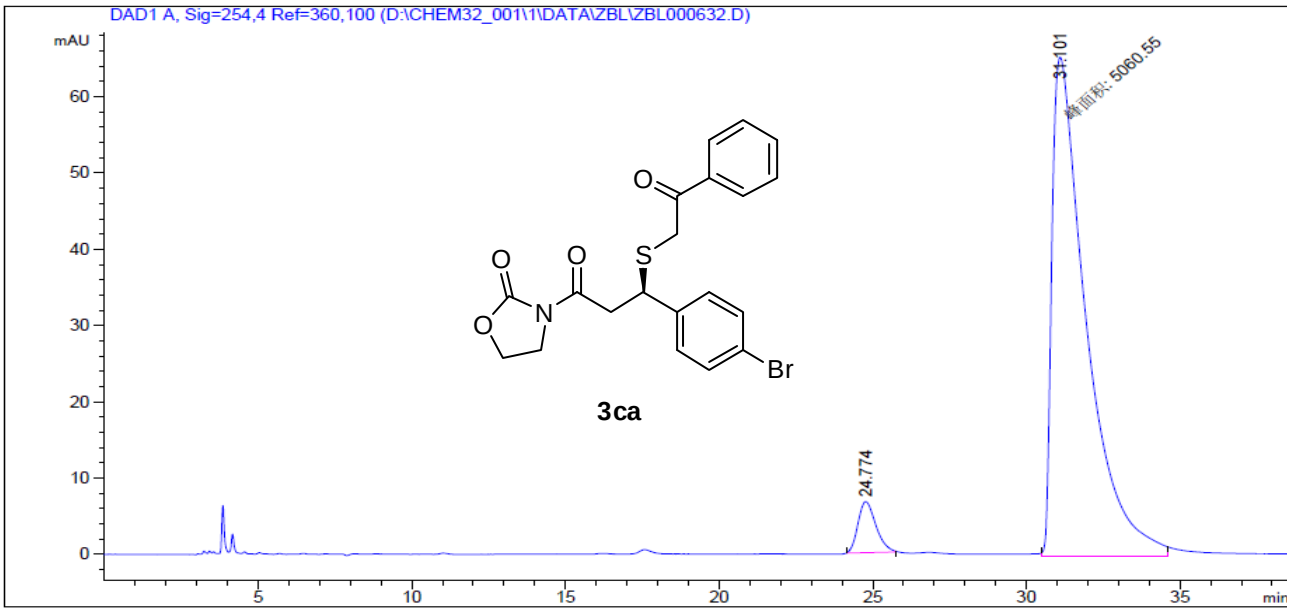

| Peak # | RetTime [min] | Type | Width [min] | Area [mAU*s] | Height [mAU] | Area % |
|---|---|---|---|---|---|---|
| 1 | 25.884 | MM | 0.7284 | 1742.88000 | 39.87645 | 50.0426 |
| 2 | 32.092 | MM | 0.9061 | 1739.91003 | 32.00261 | 49.9574 |



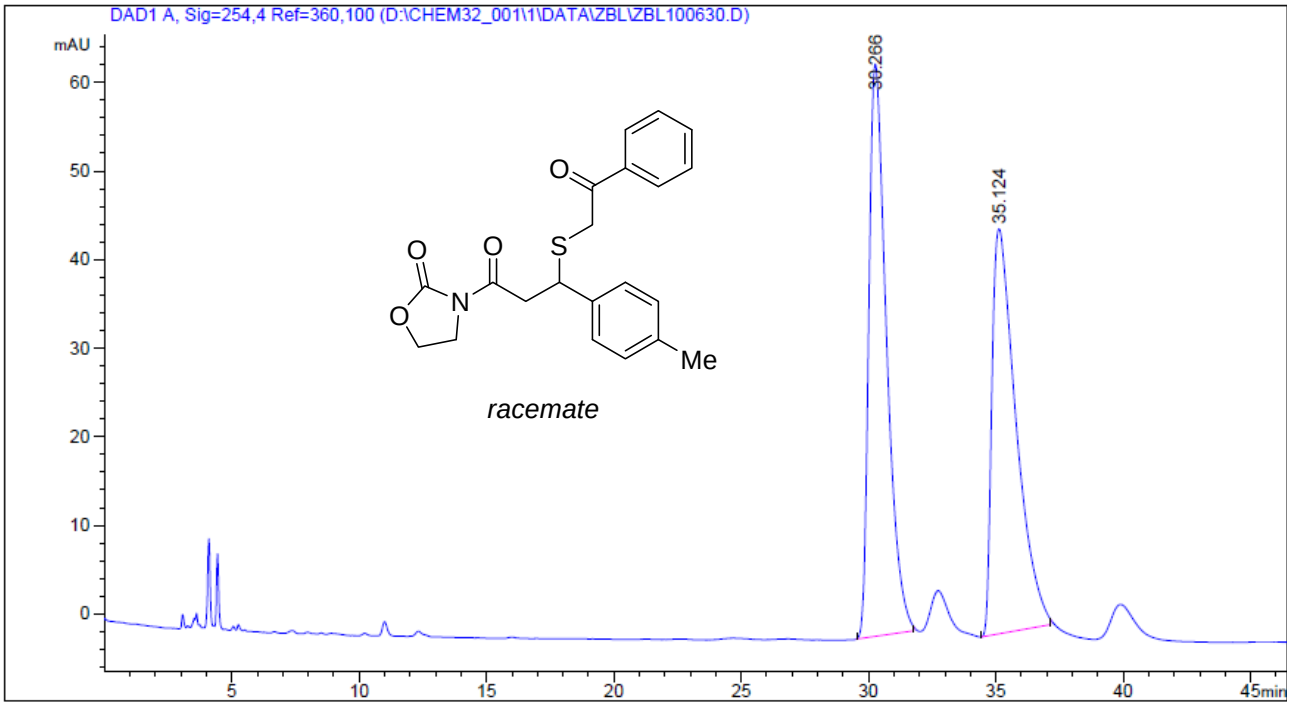

| Peak # | RetTime [min] | Type | Width [min] | Area [mAU*s] | Height [mAU] | Area % |
|---|---|---|---|---|---|---|
| 1 | 26.134 | MM | 0.7254 | 366.10352 | 8.41180 | 14.5230 |
| 2 | 32.195 | MM | 0.9113 | 2154.75171 | 39.40778 | 85.4770 |



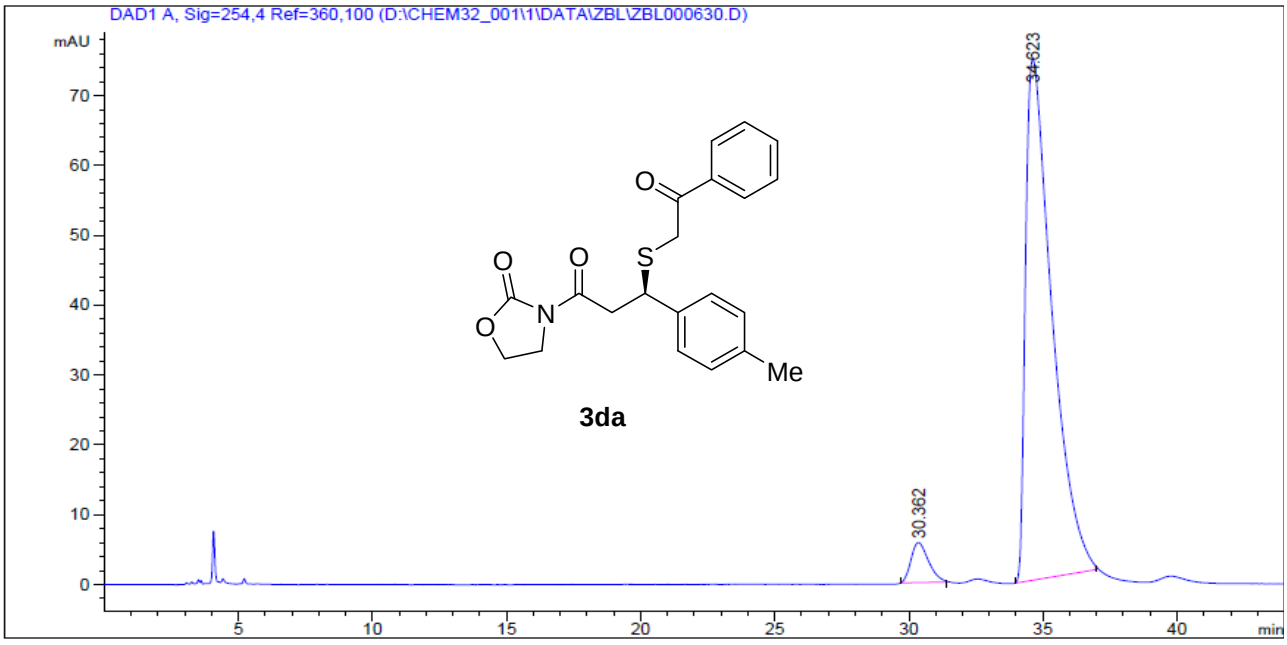

| Peak # | RetTime [min] | Type | Width [min] | Area [mAU*s] | Height [mAU] | Area % |
|---|---|---|---|---|---|---|
| 1 | 24.438 | BB | 0.6305 | 6514.00879 | 156.22118 | 50.5497 |
| 2 | 31.014 | MM | 1.2357 | 6372.32568 | 85.94461 | 49.4503 |



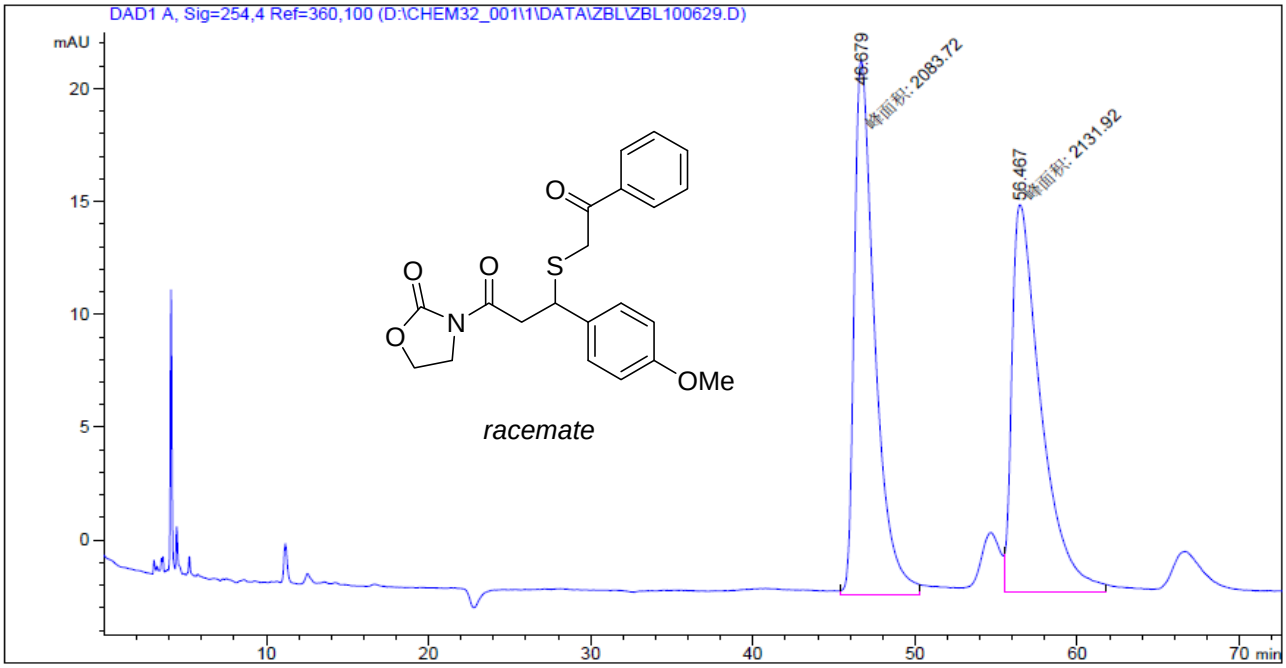

| Peak # | RetTime [min] | Type | Width [min] | Area [mAU*s] | Height [mAU] | Area % |
|---|---|---|---|---|---|---|
| 1 | 24.774 | BB | 0.5888 | 271.60657 | 6.70151 | 5.0937 |
| 2 | 31.101 | MM | 1.2889 | 5060.54883 | 65.43675 | 94.9063 |



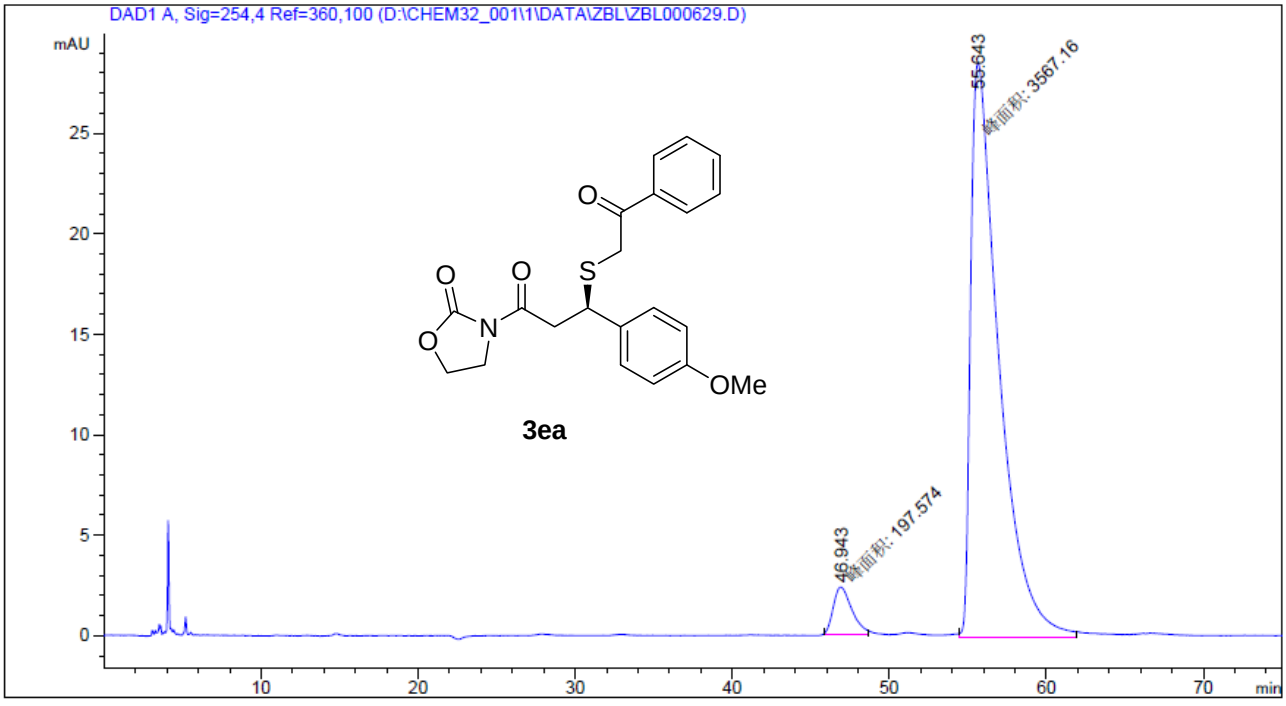

| Peak # | RetTime [min] | Type | Width [min] | Area [mAU*s] | Height [mAU] | Area % |
|---|---|---|---|---|---|---|
| 1 | 30.266 | BB | 0.7320 | 3112.44116 | 64.60701 | 50.9031 |
| 2 | 35.124 | BB | 0.9739 | 3001.99854 | 45.73005 | 49.0969 |



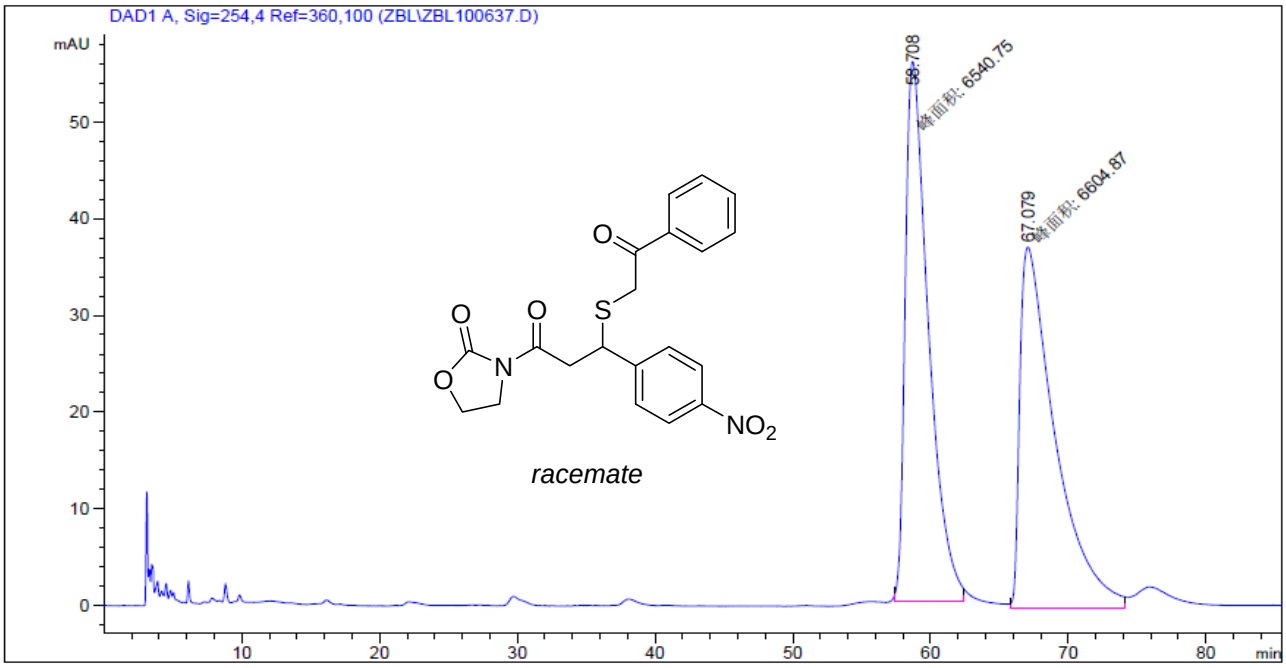

| Peak # | RetTime [min] | Type | Width [min] | Area [mAU*s] | Height [mAU] | Area % |
|---|---|---|---|---|---|---|
| 1 | 30.362 | BB | 0.6497 | 259.93155 | 5.72551 | 4.8528 |
| 2 | 34.623 | BB | 1.0131 | 5096.41846 | 74.59274 | 95.1472 |



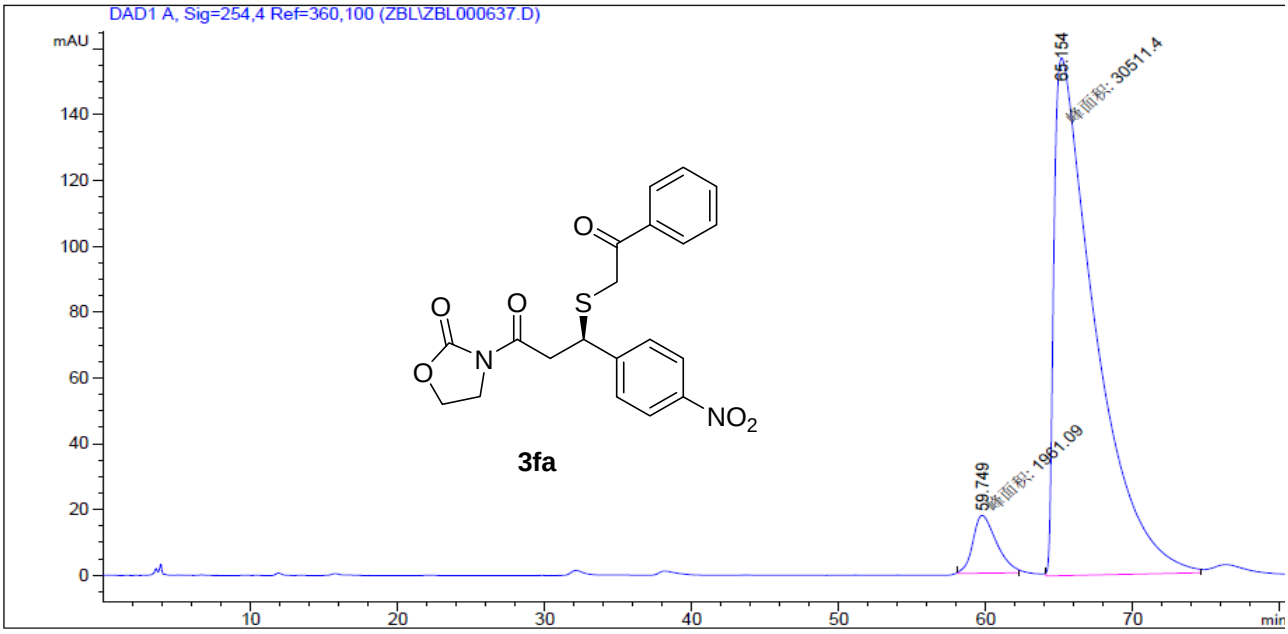

| Peak # | RetTime [min] | Type | Width [min] | Area [mAU*s] | Height [mAU] | Area % |
|---|---|---|---|---|---|---|
| 1 | 46.679 | MM | 1.4693 | 2083.72485 | 23.63613 | 49.4284 |
| 2 | 56.467 | MM | 2.0706 | 2131.91553 | 17.16036 | 50.5716 |



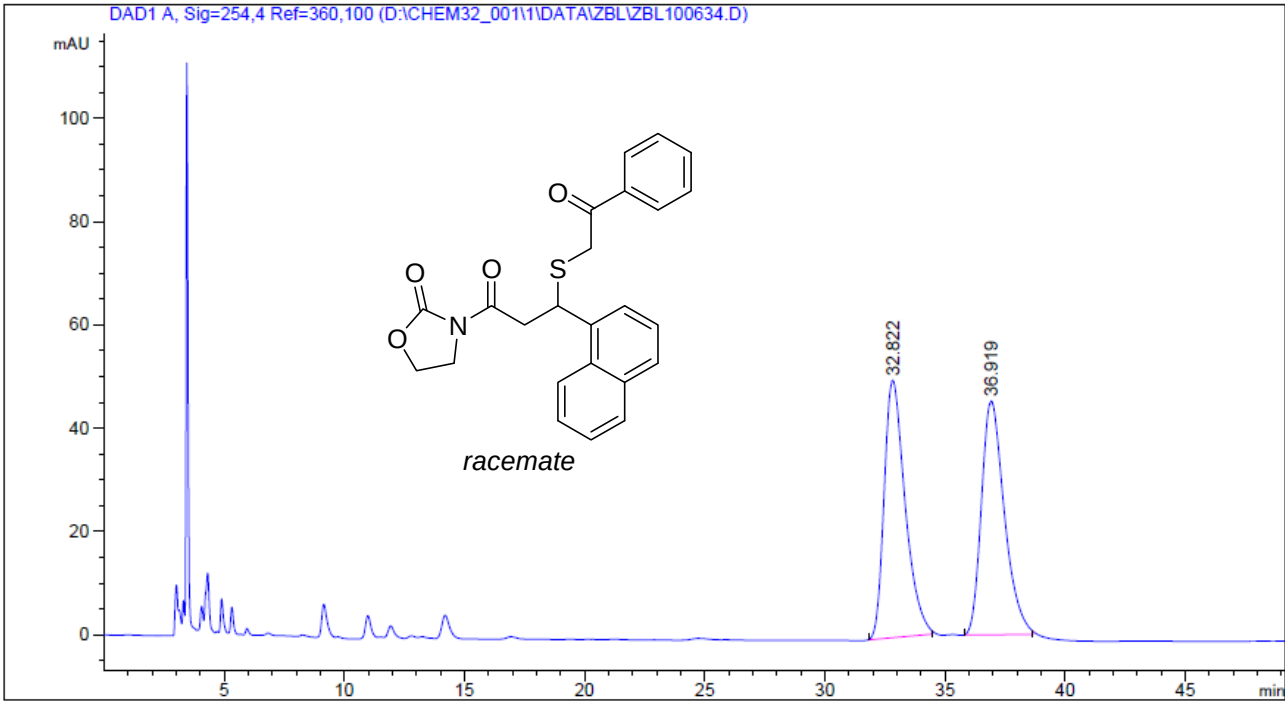

| Peak # | RetTime [min] | Type | Width [min] | Area [mAU*s] | Height [mAU] | Area % |
|---|---|---|---|---|---|---|
| 1 | 46.943 | MM | 1.3855 | 197.57423 | 2.37676 | 5.2480 |
| 2 | 55.643 | MM | 2.0817 | 3567.16479 | 28.55931 | 94.7520 |



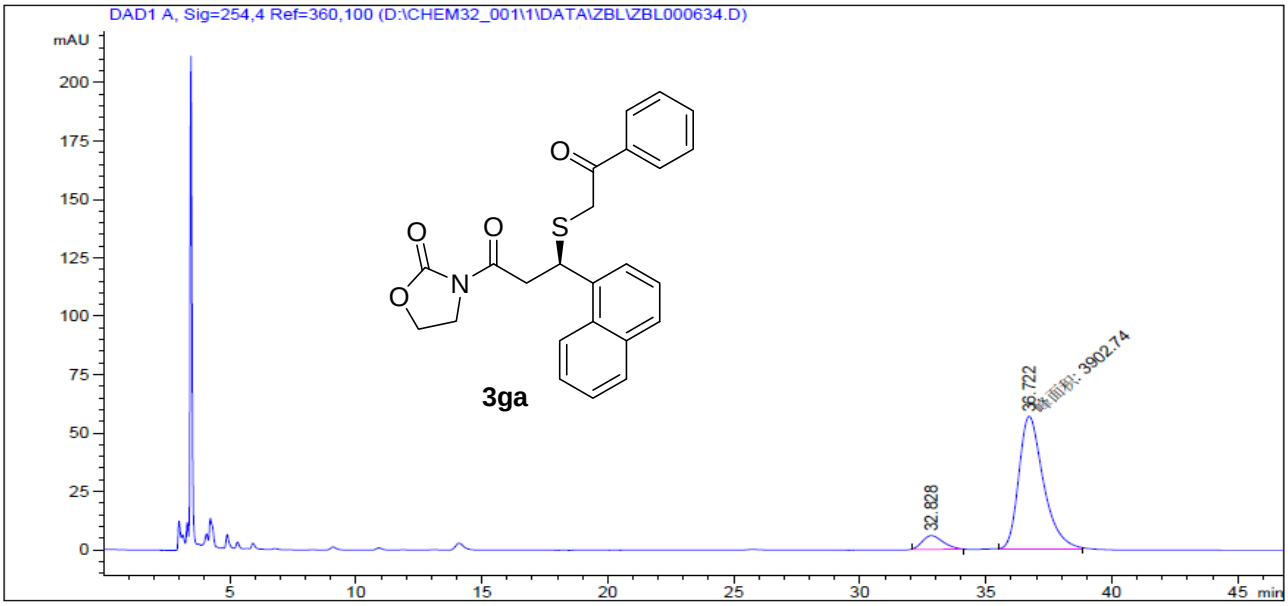

| Peak # | RetTime [min] | Type | Width [min] | Area [mAU*s] | Height [mAU] | Area % |
|---|---|---|---|---|---|---|
| 1 | 58.708 | MM | 1.9514 | 6540.75146 | 55.86385 | 49.7561 |
| 2 | 67.079 | MM | 2.9471 | 6604.86572 | 37.35222 | 50.2439 |



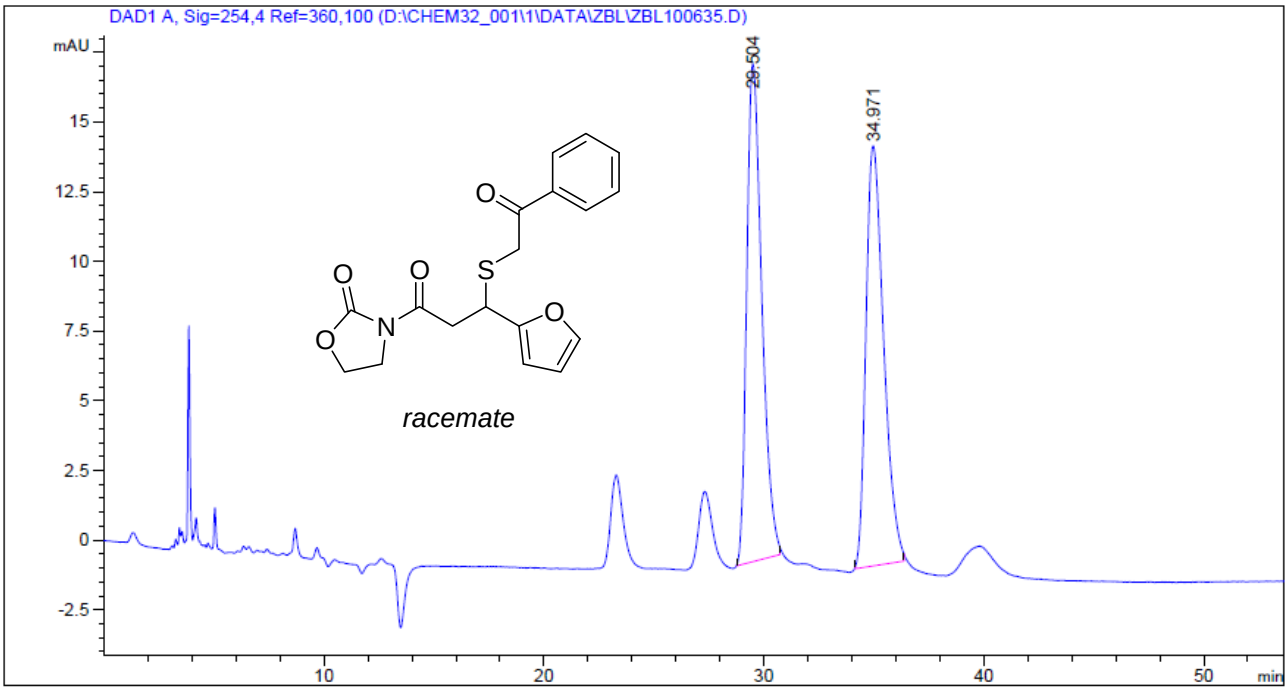

| Peak # | RetTime [min] | Type | Width [min] | Area [mAU*s] | Height [mAU] | Area % |
|---|---|---|---|---|---|---|
| 1 | 59.749 | MM | 1.8613 | 1961.08923 | 17.56000 | 6.0392 |
| 2 | 65.154 | MM | 3.2304 | 3.05114e4 | 157.41600 | 93.9608 |



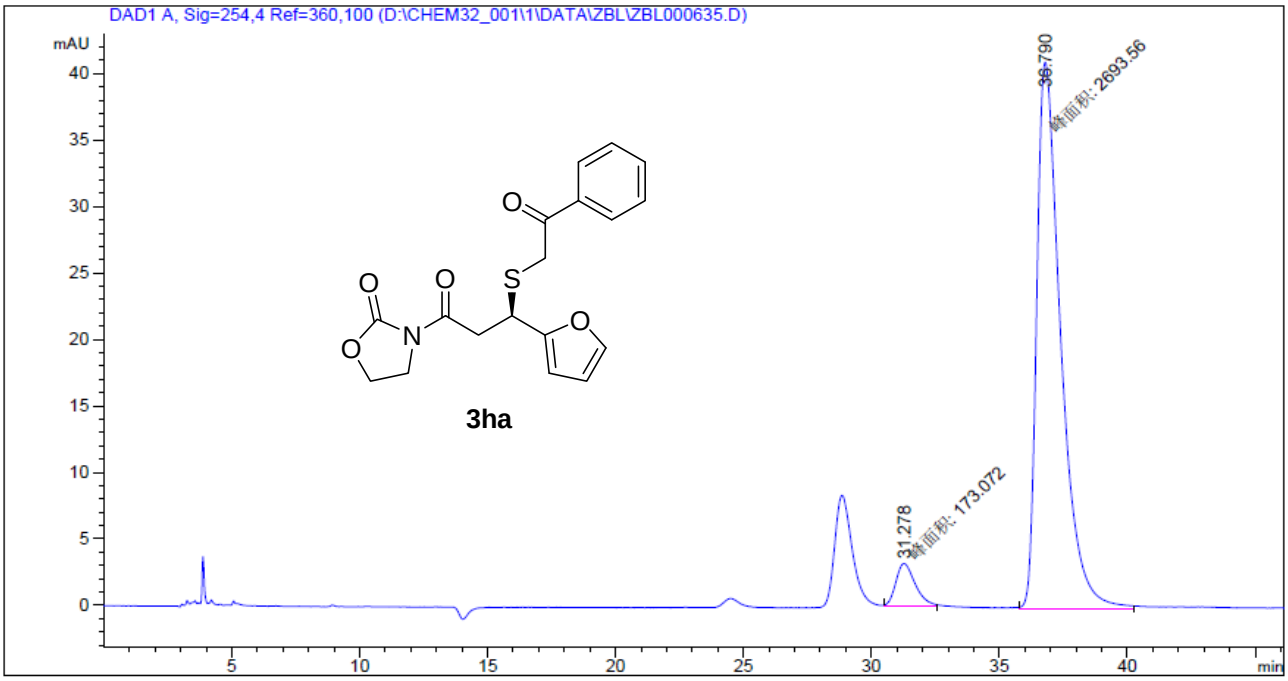

| Peak # | RetTime [min] | Type | Width [min] | Area [mAU*s] | Height [mAU] | Area % |
|---|---|---|---|---|---|---|
| 1 | 32.822 | BB | 0.9214 | 3023.59570 | 49.86876 | 50.1704 |
| 2 | 36.919 | BB | 0.9912 | 3003.05127 | 45.31006 | 49.8296 |



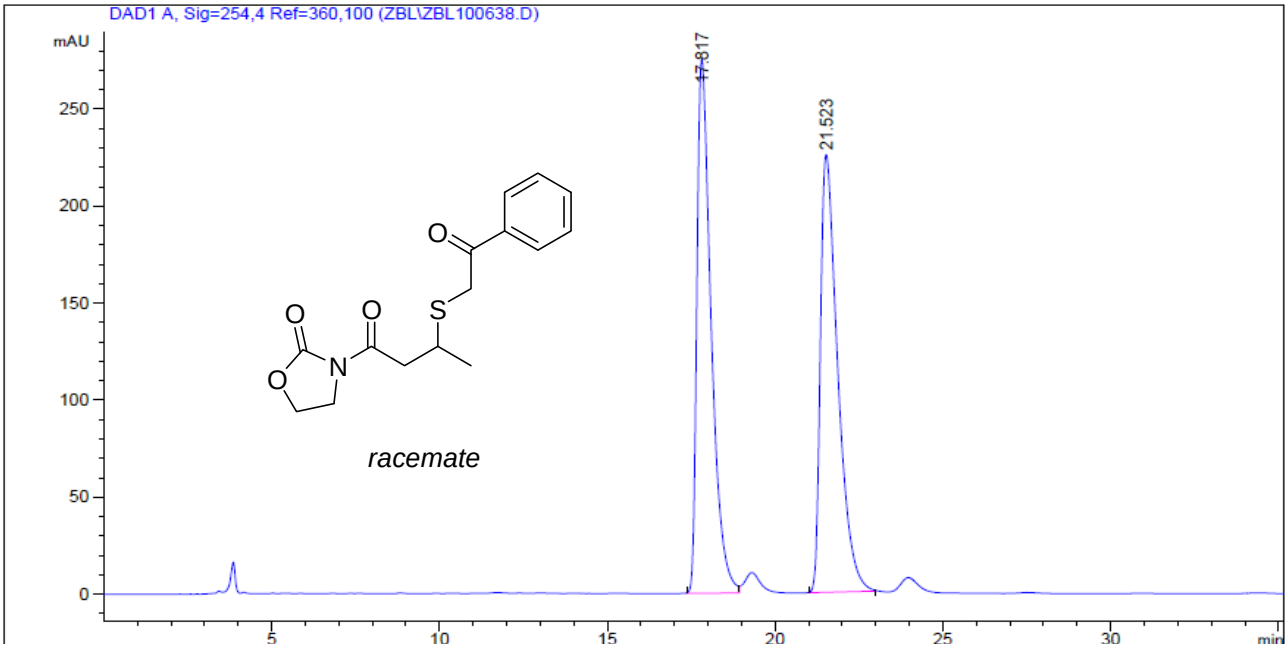

| Peak # | RetTime [min] | Type | Width [min] | Area [mAU*s] | Height [mAU] | Area % |
|---|---|---|---|---|---|---|
| 1 | 32.828 | BB | 0.7672 | 336.08490 | 5.87702 | 7.9287 |
| 2 | 36.722 | MM | 1.1415 | 3902.74292 | 56.98096 | 92.0713 |



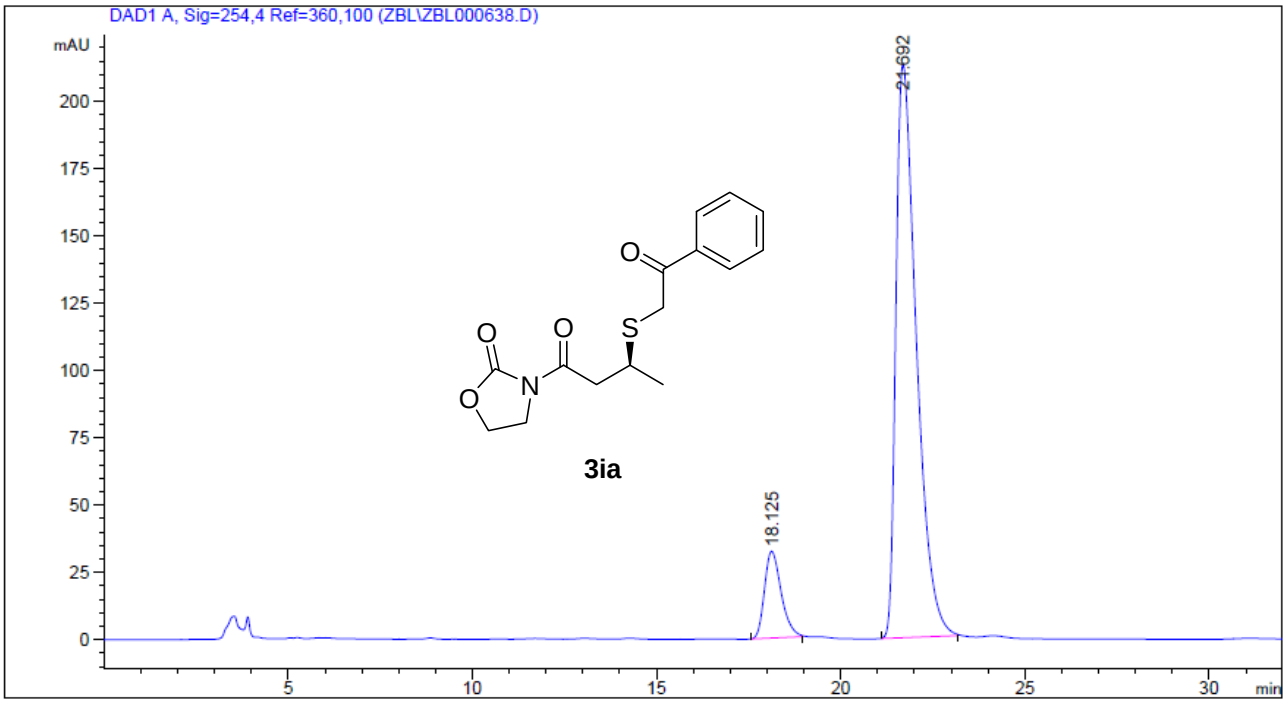

| Peak # | RetTime [min] | Type | Width [min] | Area [mAU*s] | Height [mAU] | Area % |
|---|---|---|---|---|---|---|
| 1 | 29.504 | BB | 0.7260 | 848.06470 | 17.85942 | 50.2103 |
| 2 | 34.971 | BB | 0.8173 | 840.96069 | 15.06478 | 49.7897 |



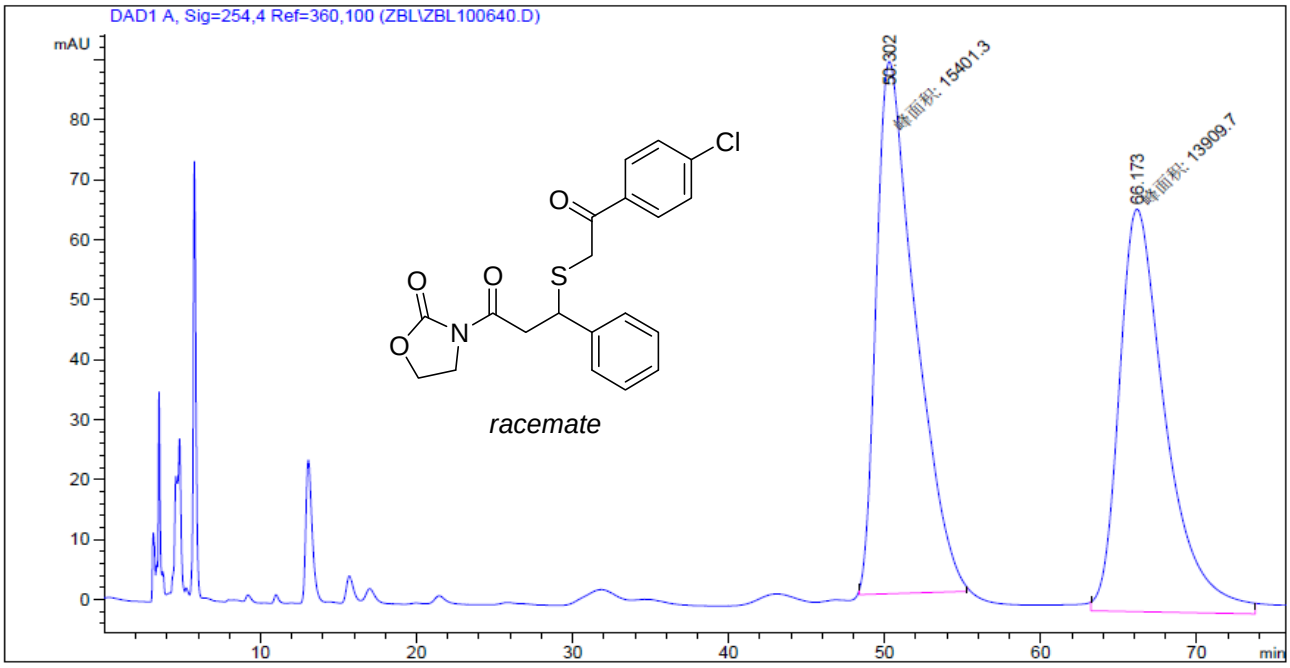

| Peak # | RetTime [min] | Type | Width [min] | Area [mAU*s] | Height [mAU] | Area % |
|---|---|---|---|---|---|---|
| 1 | 31.278 | MM | 0.8907 | 173.07243 | 3.23858 | 6.0375 |
| 2 | 36.790 | MM | 1.0908 | 2693.56299 | 41.15644 | 93.9625 |



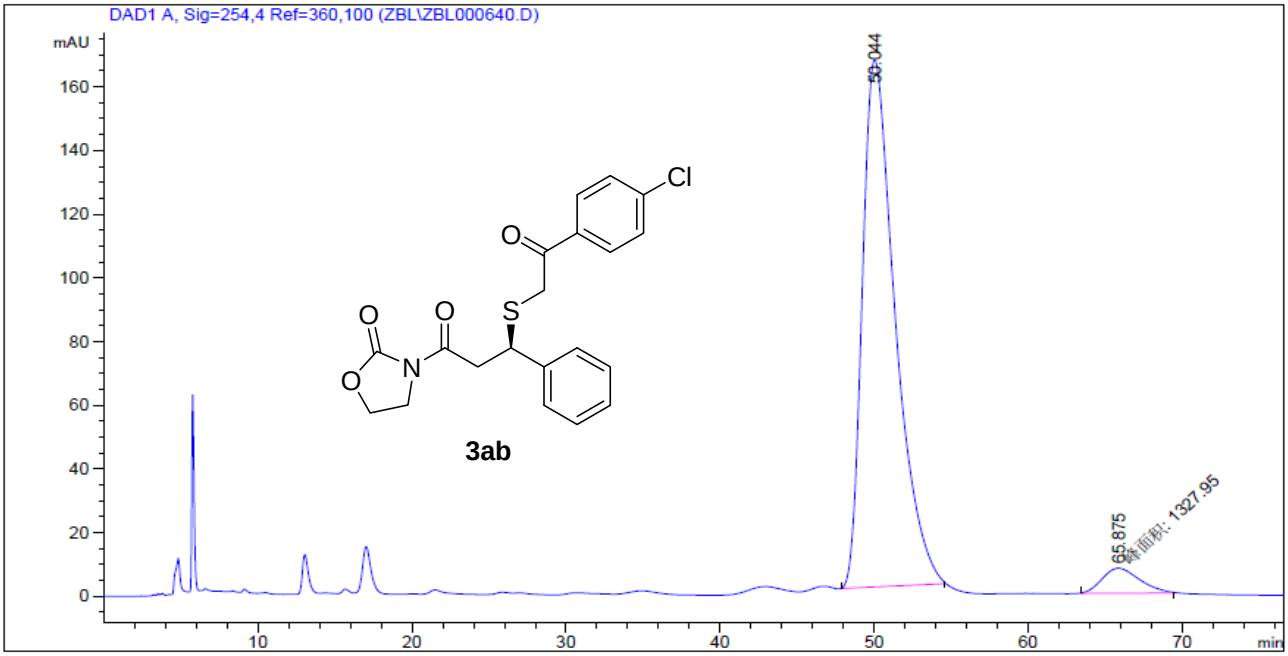

| Peak # | RetTime [min] | Type | Width [min] | Area [mAU*s] | Height [mAU] | Area % |
|---|---|---|---|---|---|---|
| 1 | 17.817 | BB | 0.4438 | 8112.32373 | 275.28003 | 50.1129 |
| 2 | 21.523 | BB | 0.5376 | 8075.78027 | 225.59087 | 49.8871 |



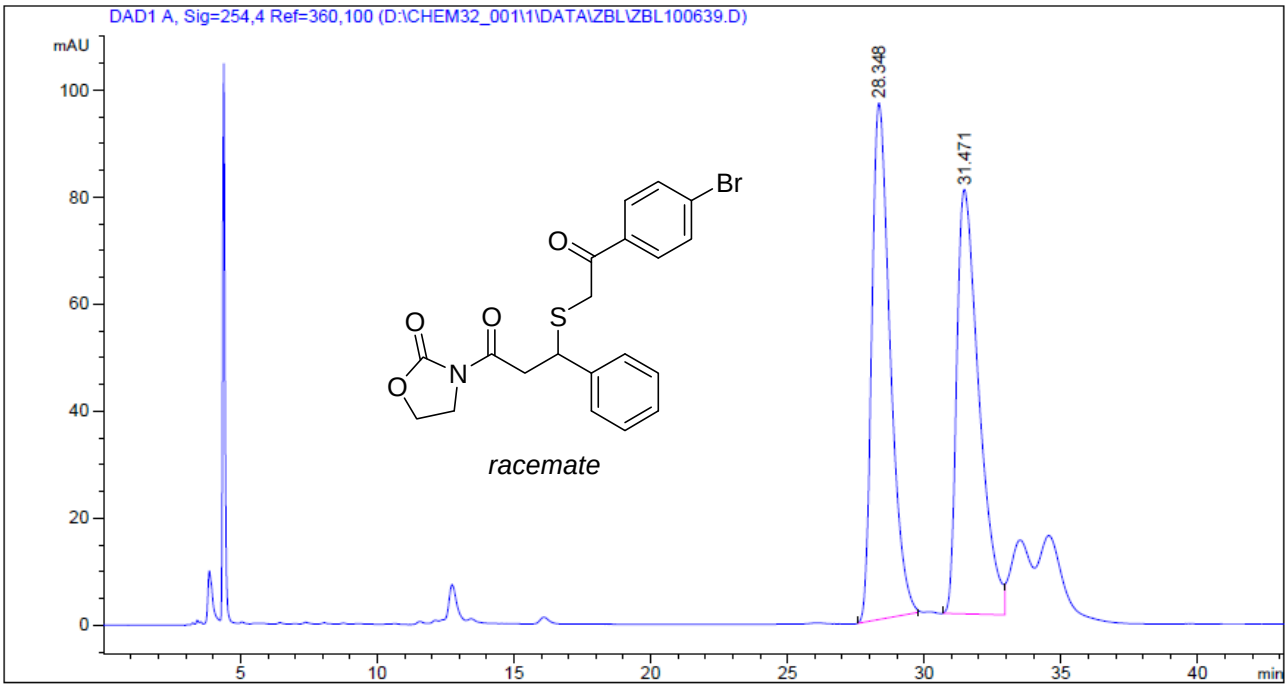

| Peak # | RetTime [min] | Type | Width [min] | Area [mAU*s] | Height [mAU] | Area % |
|---|---|---|---|---|---|---|
| 1 | 18.125 | BB | 0.4840 | 1017.23834 | 32.24773 | 11.0105 |
| 2 | 21.692 | BB | 0.5859 | 8221.52930 | 213.21544 | 88.9895 |



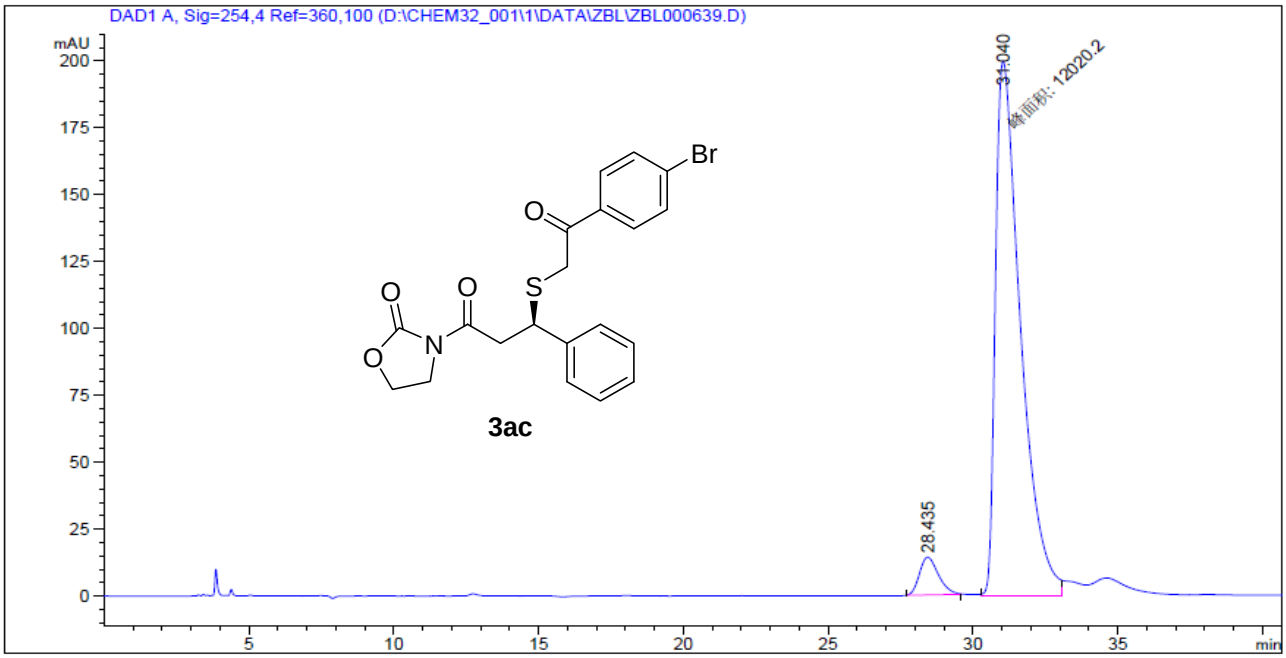

| Peak # | RetTime [min] | Type | Width [min] | Area [mAU*s] | Height [mAU] | Area % |
|---|---|---|---|---|---|---|
| 1 | 50.302 | MM | 2.8923 | 1.54013e4 | 88.74859 | 52.5445 |
| 2 | 66.173 | MM | 3.4540 | 1.39097e4 | 67.11952 | 47.4555 |



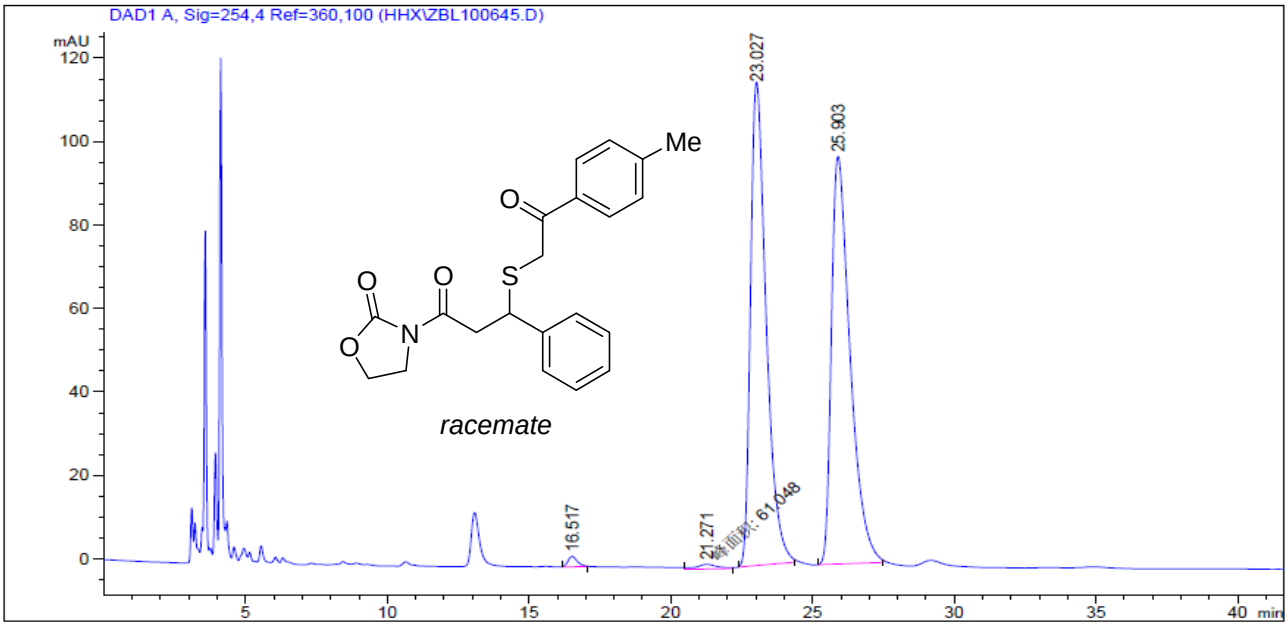

| Peak # | RetTime [min] | Type | Width [min] | Area [mAU*s] | Height [mAU] | Area % |
|---|---|---|---|---|---|---|
| 1 | 50.044 | BB | 2.1636 | 2.45166e4 | 165.56401 | 94.8618 |
| 2 | 65.875 | MM | 2.8121 | 1327.95007 | 7.87037 | 5.1382 |



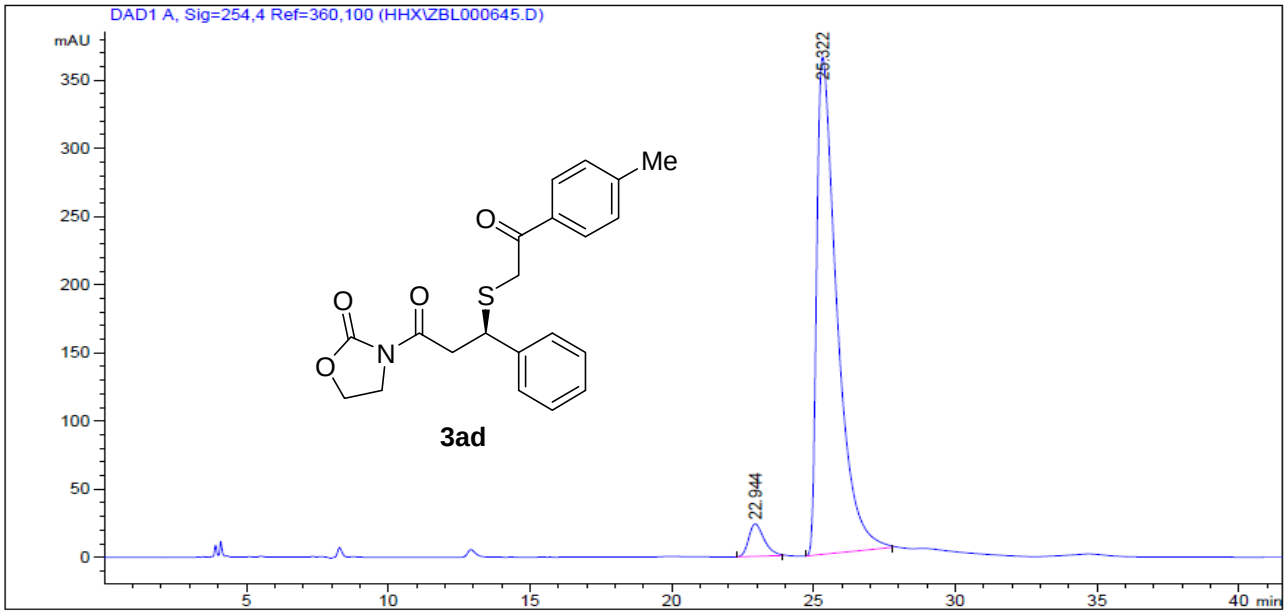

| Peak # | RetTime [min] | Type | Width [min] | Area [mAU*s] | Height [mAU] | Area % |
|---|---|---|---|---|---|---|
| 1 | 28.348 | BB | 0.7044 | 4503.37012 | 96.50590 | 50.1166 |
| 2 | 31.471 | BB | 0.8494 | 4482.40674 | 79.30060 | 49.8834 |



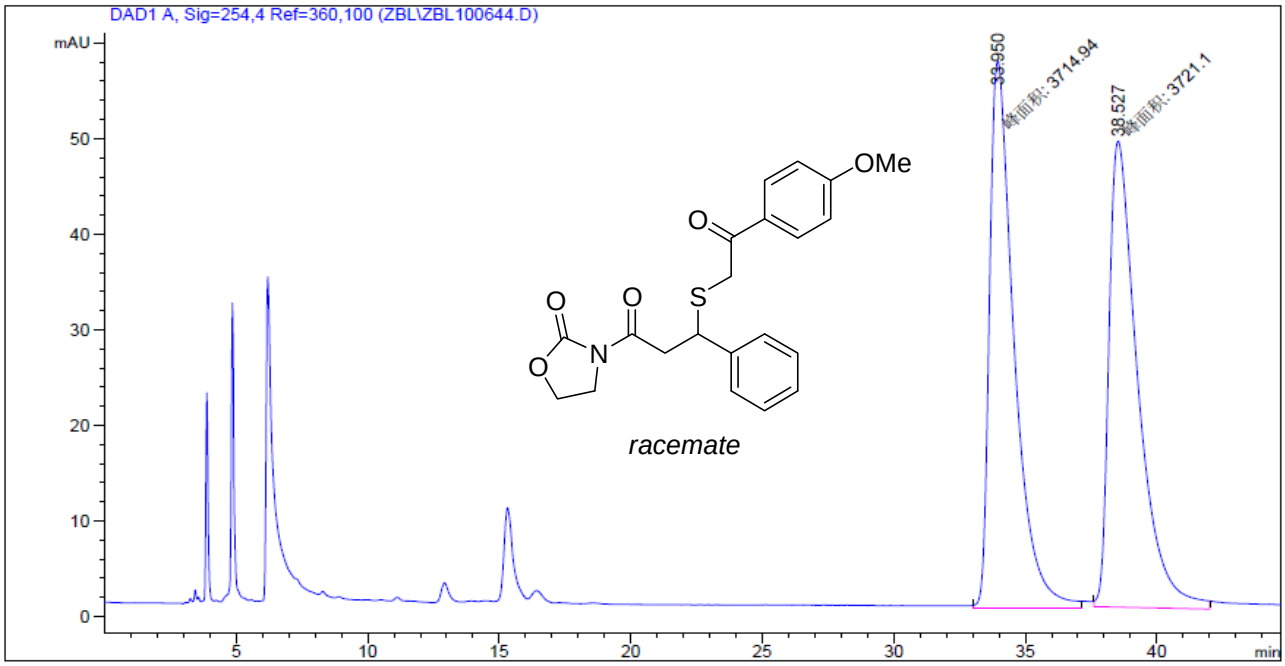

| Peak # | RetTime [min] | Type | Width [min] | Area [mAU*s] | Height [mAU] | Area % |
|---|---|---|---|---|---|---|
| 1 | 28.435 | BB | 0.6726 | 642.82037 | 14.13306 | 5.0764 |
| 2 | 31.040 | MM | 1.0021 | 1.20202e4 | 199.92143 | 94.9236 |



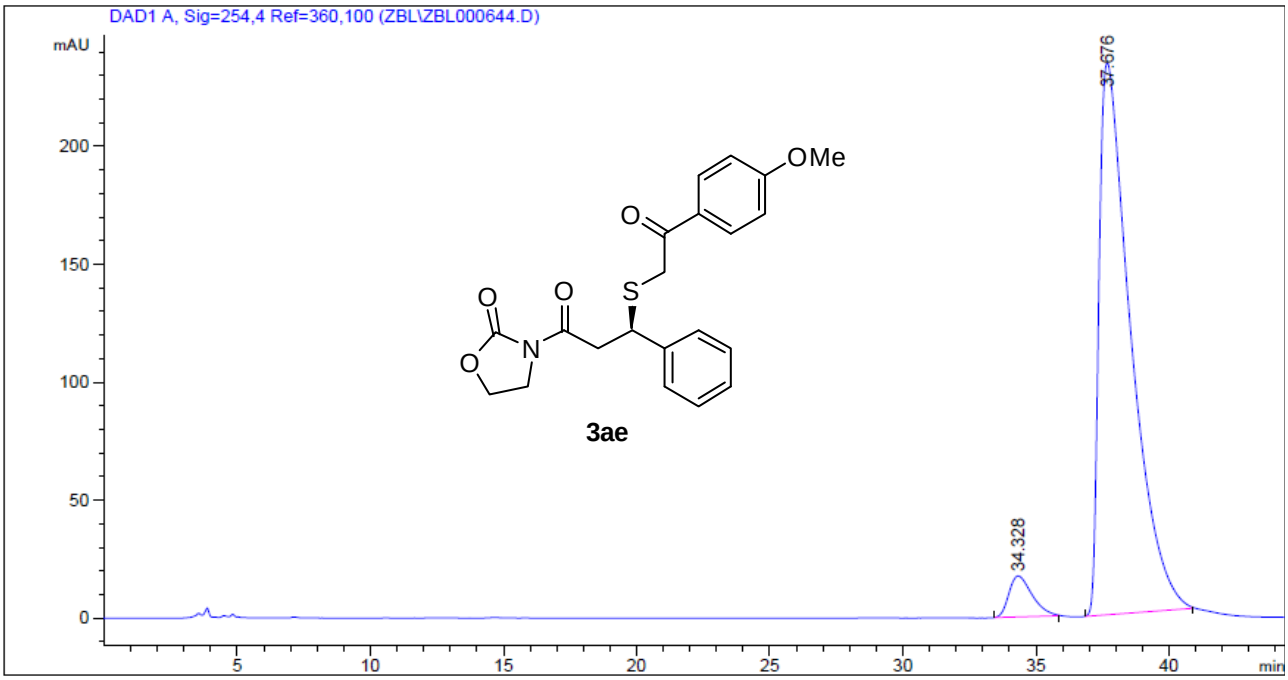

| Peak # | RetTime [min] | Type | Width [min] | Area [mAU*s] | Height [mAU] | Area % |
|---|---|---|---|---|---|---|
| 1 | 16.517 | BB | 0.3429 | 57.52852 | 2.49595 | 0.6361 |
| 2 | 21.271 | MM | 0.8961 | 61.04803 | 1.13538 | 0.6750 |
| 3 | 23.027 | BB | 0.5818 | 4448.43408 | 115.89296 | 49.1878 |
| 4 | 25.903 | BB | 0.6948 | 4476.75879 | 97.65994 | 49.5010 |



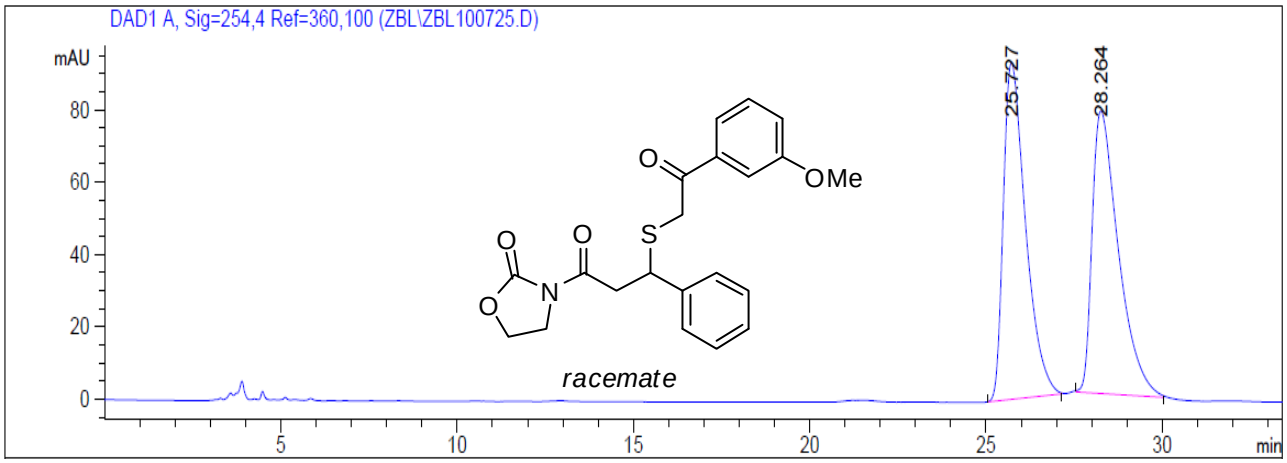

| Peak # | RetTime [min] | Type | Width [min] | Area [mAU*s] | Height [mAU] | Area % |
|---|---|---|---|---|---|---|
| 1 | 22.944 | BB | 0.5684 | 902.33527 | 23.79382 | 4.7423 |
| 2 | 25.322 | BB | 0.7376 | 1.81249e4 | 364.84268 | 95.2577 |



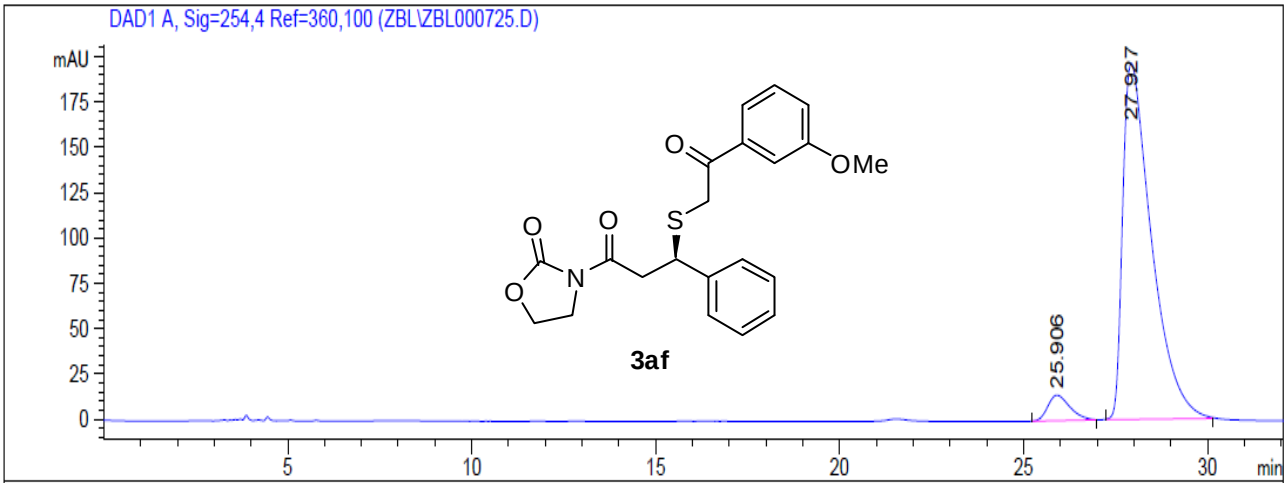

| Peak # | RetTime [min] | Type | Width [min] | Area [mAU*s] | Height [mAU] | Area % |
|---|---|---|---|---|---|---|
| 1 | 33.950 | MM | 1.0820 | 3714.94092 | 57.22089 | 49.9586 |
| 2 | 38.527 | MM | 1.2717 | 3721.10327 | 48.76958 | 50.0414 |



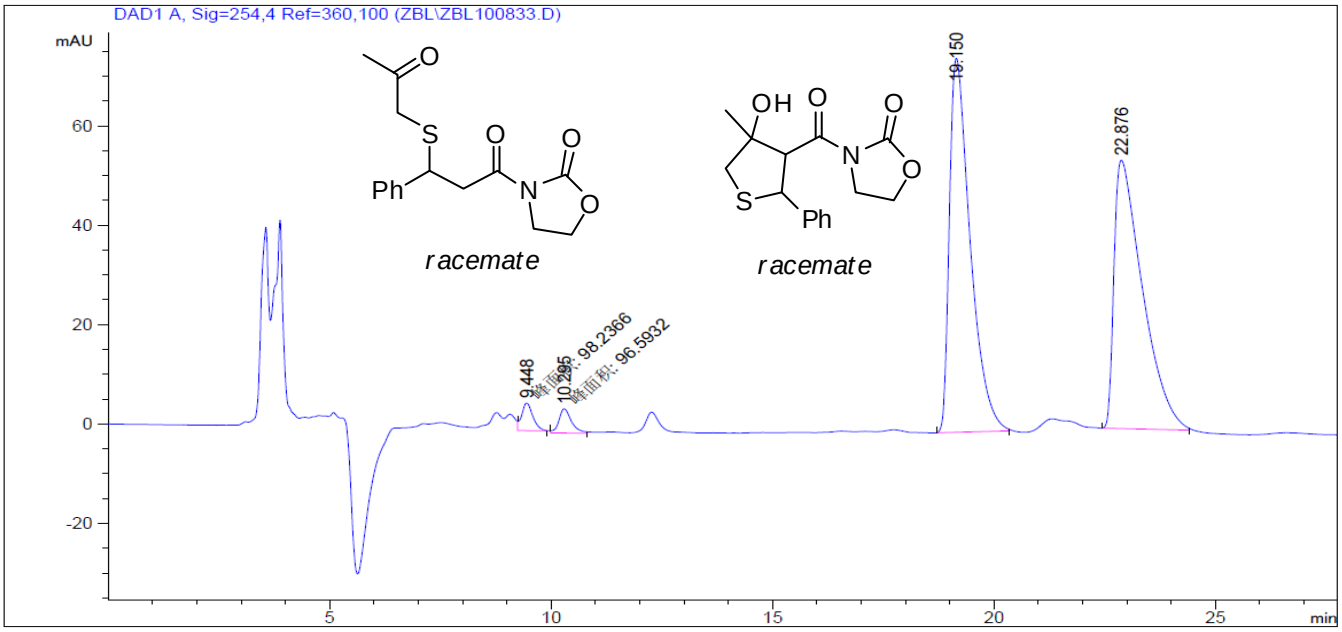

| Peak # | RetTime [min] | Type | Width [min] | Area [mAU*s] | Height [mAU] | Area % |
|---|---|---|---|---|---|---|
| 1 | 34.328 | BB | 0.8813 | 1052.49121 | 17.36020 | 5.1660 |
| 2 | 37.676 | BB | 1.2113 | 1.93208e4 | 234.00119 | 94.8340 |



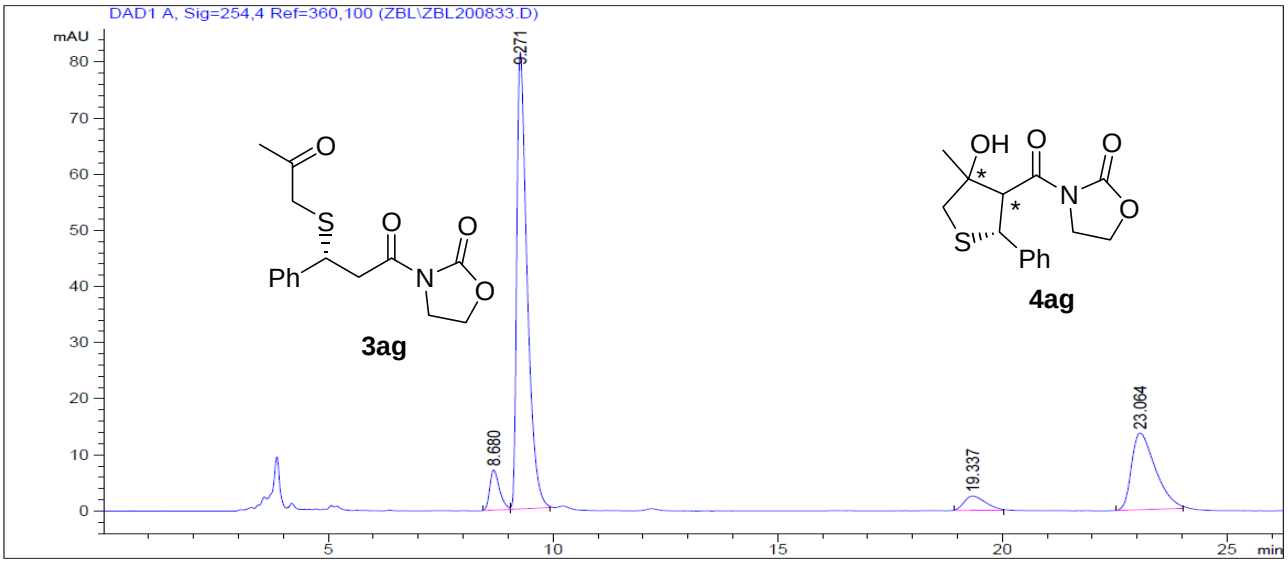

| Peak # | RetTime [min] | Type | Width [min] | Area [mAU*s] | Height [mAU] | Area % |
|---|---|---|---|---|---|---|
| 1 | 25.727 | BB | 0.6592 | 4082.45312 | 93.16156 | 50.1758 |
| 2 | 28.264 | BB | 0.7768 | 4053.84839 | 78.20132 | 49.8242 |




| Peak # | RetTime [min] | Type | Width [min] | Area [mAU*s] | Height [mAU] | Area % |
|---|---|---|---|---|---|---|
| 1 | 25.906 | BB | 0.6311 | 585.04639 | 14.07022 | 5.1863 |
| 2 | 27.927 | BB | 0.8033 | 1.06956e4 | 196.42401 | 94.8137 |

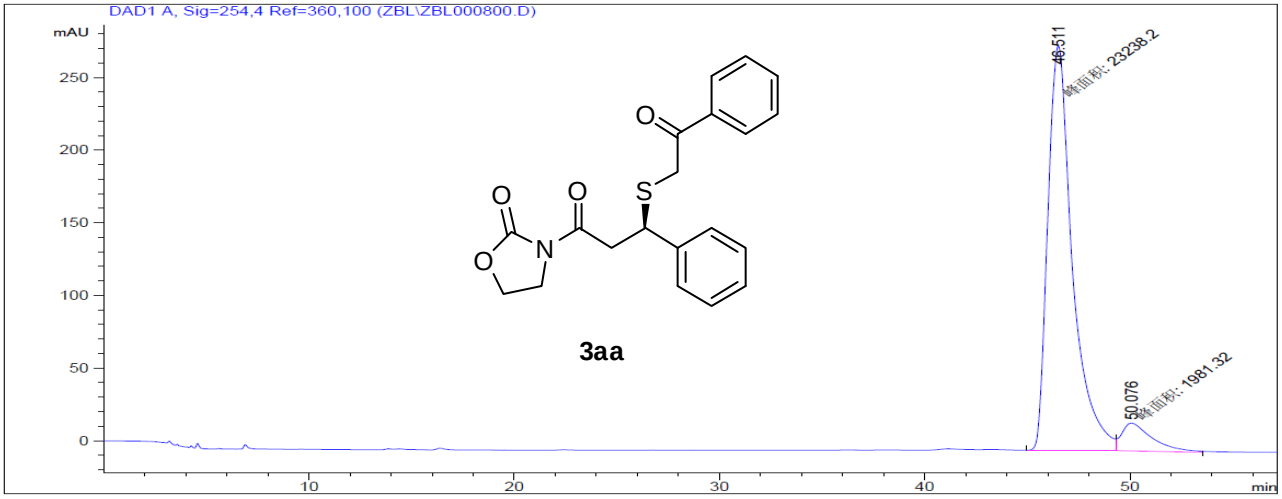



| # | Peak | RetTime [min] | Type | Width [min] | Area [mAU*s] | Height [mAU] | Area % |
|---|---|---|---|---|---|---|---|
| 1 | | 9.448 | MM | 0.2936 | 98.23657 | 5.57575 | 1.9415 |
| 2 | | 10.295 | MM | 0.3282 | 96.59322 | 4.90523 | 1.9090 |
| 3 | | 19.150 | BB | 0.4926 | 2456.50415 | 75.29307 | 48.5499 |
| 4 | | 22.876 | BB | 0.6579 | 2408.42163 | 54.04624 | 47.5996 |




| # | Peak | RetTime [min] | Type | Width [min] | Area [mAU*s] | Height [mAU] | Area % |
|---|---|---|---|---|---|---|---|
| 1 | | 8.680 | BV | 0.2268 | 107.29884 | 7.16305 | 5.3555 |
| 2 | | 9.271 | VB | 0.2395 | 1307.43140 | 81.36192 | 65.2571 |
| 3 | | 19.337 | BB | 0.4645 | 83.77222 | 2.54206 | 4.1813 |
| 4 | | 23.064 | BB | 0.5511 | 505.00677 | 13.66600 | 25.2061 |

Gram-scale reaction




| Peak # | RetTime [min] | Type | Width [min] | Area [mAU*s] | Height [mAU] | Area % |
|---|---|---|---|---|---|---|
| 1 | 46.511 | MM | 1.3899 | 2.32382e4 | 278.66580 | 92.1437 |
| 2 | 50.076 | MM | 1.7246 | 1981.32166 | 19.14795 | 7.8563 |