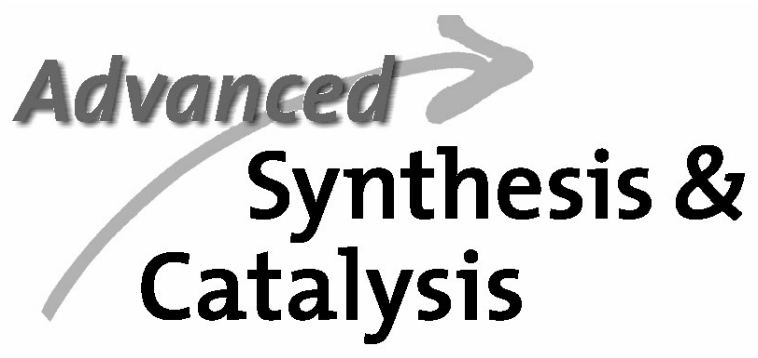


Supporting Information

## Supporting Information

# Palladium-iminodiacetic acid immobilized on pH-responsive polymeric microspheres: efficient quasi-homogeneous catalyst for Suzuki and Heck reactions in aqueous solution

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### 1. $^1$H NMR (400 MHz) for the synthesized products

Biphenyl (1)[1]. $^1$H NMR (400MHz, $CDCl_3$): d (ppm) 7.35 (t, *J* =7.6 Hz, 2H), 7.45 (t, *J* =7.6 Hz, 4H), 7.60 (d, *J* =7.6 Hz, 4H).

4-Hydroxybiphenyl (2)[2]. $^1$H NMR (400MHz, $CDCl_3$): d (ppm) 6.91 (d, *J* =8.4 Hz, 2H), 7.30 (t, *J* =7.4 Hz, 1H), 7.41 (t, *J* =7.6 Hz, 2H), 7.48 (d, *J* =8.8 Hz, 2H), 7.54 (d, *J* =7.2 Hz, 2H).

4-Methoxybiphenyl (3)[2]. $^1$H NMR (400MHz, $CDCl_3$): d (ppm) 3.86 (s, 3H), 6.98 (d, *J* =8.4 Hz, 2H), 7.30 (t, *J* =7.2 Hz, 1H), 7.41 (t, *J* =7.2 Hz, 2H), 7.54 (t, *J* =8.4 Hz, 4H).

Biphenyl-4-carbaldehyde (4)[3]. $^1$H NMR (400MHz, $CDCl_3$): d (ppm) 7.40-7.51 (m, 3H), 7.65 (d, *J* =7.2 Hz, 2H), 7.76 (d, *J* =8.0 Hz, 2H), 7.96 (d, *J* =8.4 Hz, 2H), 10.06 (s, 1H).

Biphenyl-4-carboxylic acid (5)[4]. $^1$H NMR (400MHz, DMSO-$d_6$): d (ppm) 7.42 (t, *J* =7.4 Hz, 1H), 7.50 (t, *J* =7.4 Hz, 2H), 7.73 (d, *J* =7.6 Hz, 2H), 7.79 (d, *J* =8.4 Hz, 2H), 8.02 (d, *J* =8.4 Hz, 2H).

4-Acetylbiphenyl (6)[5]. $^1$H NMR (400MHz, $CDCl_3$): d (ppm) 2.64 (s, 3H), 7.40 (t, *J* =7.4 Hz, 1H), 7.48 (t, *J* =7.6 Hz, 2H), 7.63 (d, *J* =7.2 Hz, 2H), 7.69 (d, *J* =8.0 Hz, 2H), 8.04 (d, *J* =8.4 Hz, 2H).

4-Nitrobiphenyl (7)[6.] $^1$H NMR (400MHz, $CDCl_3$): d (ppm) 7.43-7.52 (m, 3H), 7.63 (d, *J* =7.2 Hz, 2H), 7.74 (d, *J* =8.8 Hz, 2H), 8.30 (d, *J* =8.8 Hz, 2H).

3-Nitrobiphenyl (8)[7]. $^1$H NMR (400MHz, $CDCl_3$): d (ppm) 7.44 (t, *J* =7.2 Hz, 1H), 7.50 (t, *J* =7.2 Hz, 2H), 7.59-7.64 (m, 3H), 7.92 (d, *J* =8.0 Hz, 1H), 8.19-8.22 (dd, $J_1$ =2.0 Hz, $J_2$=8.0 Hz, 1H), 8.46 (t, *J*=2.0 Hz, 1H).

2-Nitrobiphenyl (9)[7]. $^1$H NMR (400MHz, $CDCl_3$): d (ppm) 7.31-7.34 (m, 2H), 7.40-7.50 (m, 5H), 7.62 (t, *J* =7.6 Hz, 1H), 7.83 (d, *J* =8.4 Hz, 1H).

*trans*-Stilbene (10)[8]. $^1$H NMR (400MHz, $CDCl_3$): d (ppm) 7.12 (s, 2H), 7.26 (t, *J* =7.2 Hz, 2H), 7.36 (t, *J* =7.6 Hz, 4H), 7.52 (d, *J* =7.2 Hz, 4H).

4-Methoxy-*trans*-stilbene (11)[9]. $^1$H NMR (400MHz, $CDCl_3$): d (ppm) 3.84 (s, 3H), 6.90 (d, *J* =8.4 Hz, 2H), 6.98 (d, *J* =16.4 Hz, 1H), 7.07 (d, *J* =16.0 Hz, 1H), 7.23 (t, *J* =7.6 Hz, 1H), 7.34 (t, *J* =7.6 Hz, 2H), 7.45-7.50 (m, 4H).

*trans*-Stilben-4-ol (12)[10]. $^1$H NMR (400MHz, $CDCl_3$): d (ppm) 6.83 (d, *J* =8.8 Hz, 2H), 6.97 (d, *J* =16.0 Hz, 1H), 7.05 (d, *J* =16.4 Hz, 1H), 7.22-7.26 (m, 1H), 7.34 (t, *J* =7.6 Hz, 2H), 7.41 (d, *J* = 8.8 Hz, 2H), 7.48 (d, *J* =7.6 Hz, 2H).

4-Methyl-trans-stilbene (13)[8]. $^1$H NMR (400MHz, $CDCl_3$): d (ppm) 2.37 (s, 3H), 7.08 (d, *J* =2.4 Hz, 2H), 7.18 (d, *J* =8.0 Hz, 2H), 7.24 (t, *J* =6.8 Hz, 1H), 7.36 (t, *J* =7.6 Hz, 2H), 7.42 (d, *J* =8.0 Hz, 2H), 7.51 (d, *J* =7.6 Hz, 2H).

3-Methyl-trans-stilbene (14)[11]. $^1$H NMR (400MHz, $CDCl_3$): d (ppm) 2.39 (s, 3H), 7.09 (d, *J* =8.0 Hz, 3H), 7.24-7.28 (m, 2H), 7.32-7.38 (m, 4H), 7.52 (d, *J* =7.6 Hz, 2H).

*trans*-Stilbene-4-carboxylic acid (15)[12]. $^1$H NMR (400MHz, DMSO-$d_6$): d (ppm) 7.29-7.43 (m, 5H), 7.65 (d, *J* =7.6 Hz, 2H), 7.72 (d, *J* =8.4 Hz, 2H), 7.94 (d, *J* =8.0 Hz, 2H).

4-Acetyl-*trans*-stilbene (16)[13]. $^1$H NMR (400MHz, $CDCl_3$): d (ppm) 2.61 (s, 3H), 7.13 (d, *J* =8.0 Hz, 1H), 7.24 (d, *J* =18.0 Hz, 1H), 7.30 (t, *J* =7.4 Hz, 1H), 7.38 (t, *J*

=7.6 Hz, 2H), 7.54 (d, *J* =7.6 Hz, 2H ), 7.59 (d, *J* =8.0 Hz, 2H), 7.96 (d, *J* =8.4 Hz, 2H).

4-Nitro-*trans*-stilbene (17)[8]. $^1$H NMR (400MHz, $CDCl_3$): d (ppm) 7.14 (d, *J* =16.4 Hz, 1H), 7.28 (d, *J* =14.4 Hz, 1H), 7.32-7.73 (m, 3H), 7.56 (d, *J* =7.2 Hz, 2H), 7.64 (d, *J* =8.8 Hz, 2H), 8.23 (d, *J* =8.8 Hz, 2H).

**2. References**


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**3. Spectra**

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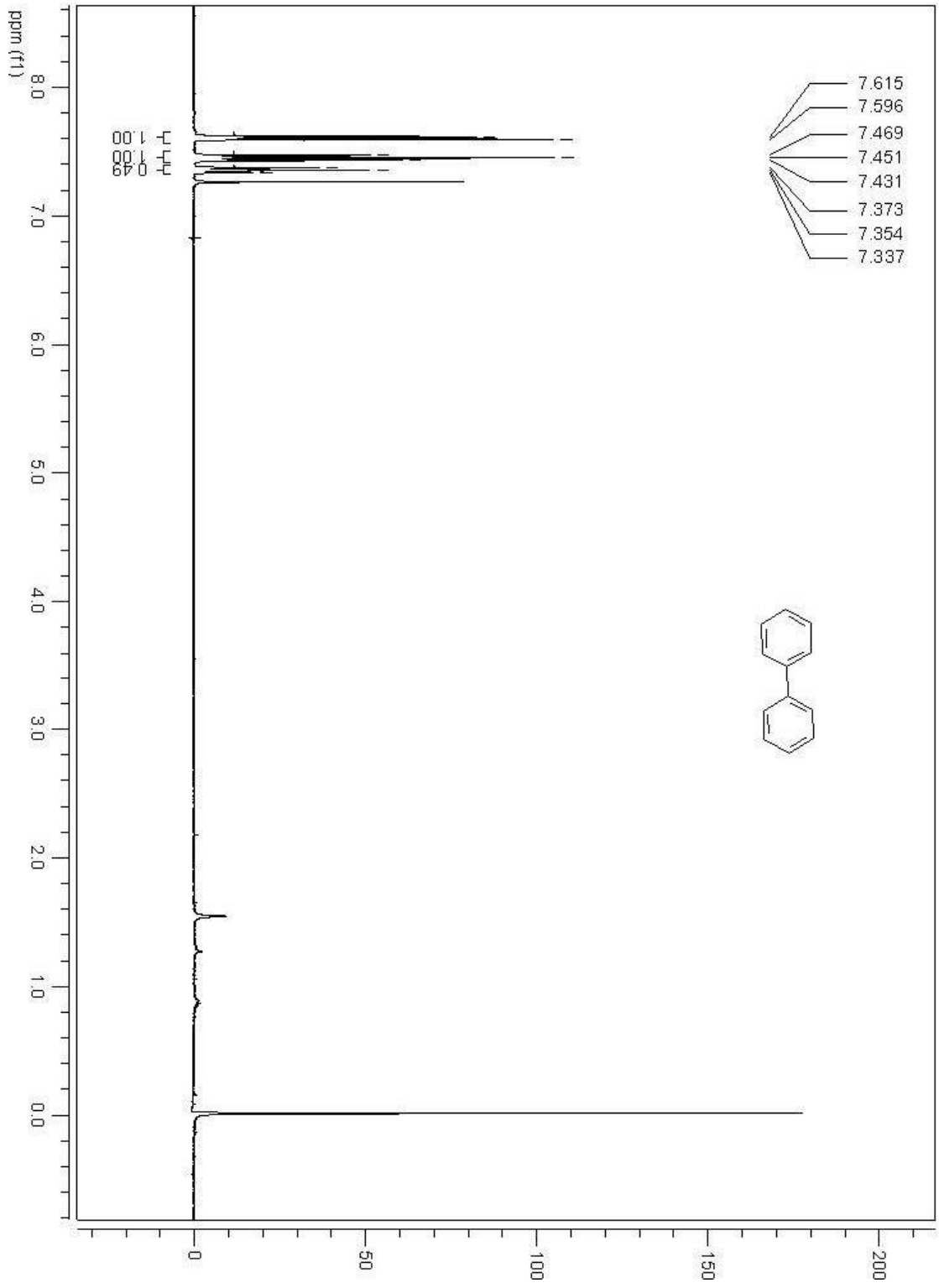
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5.0
4.0
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0
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100
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7.469
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7.431
7.373
7.354
7.337

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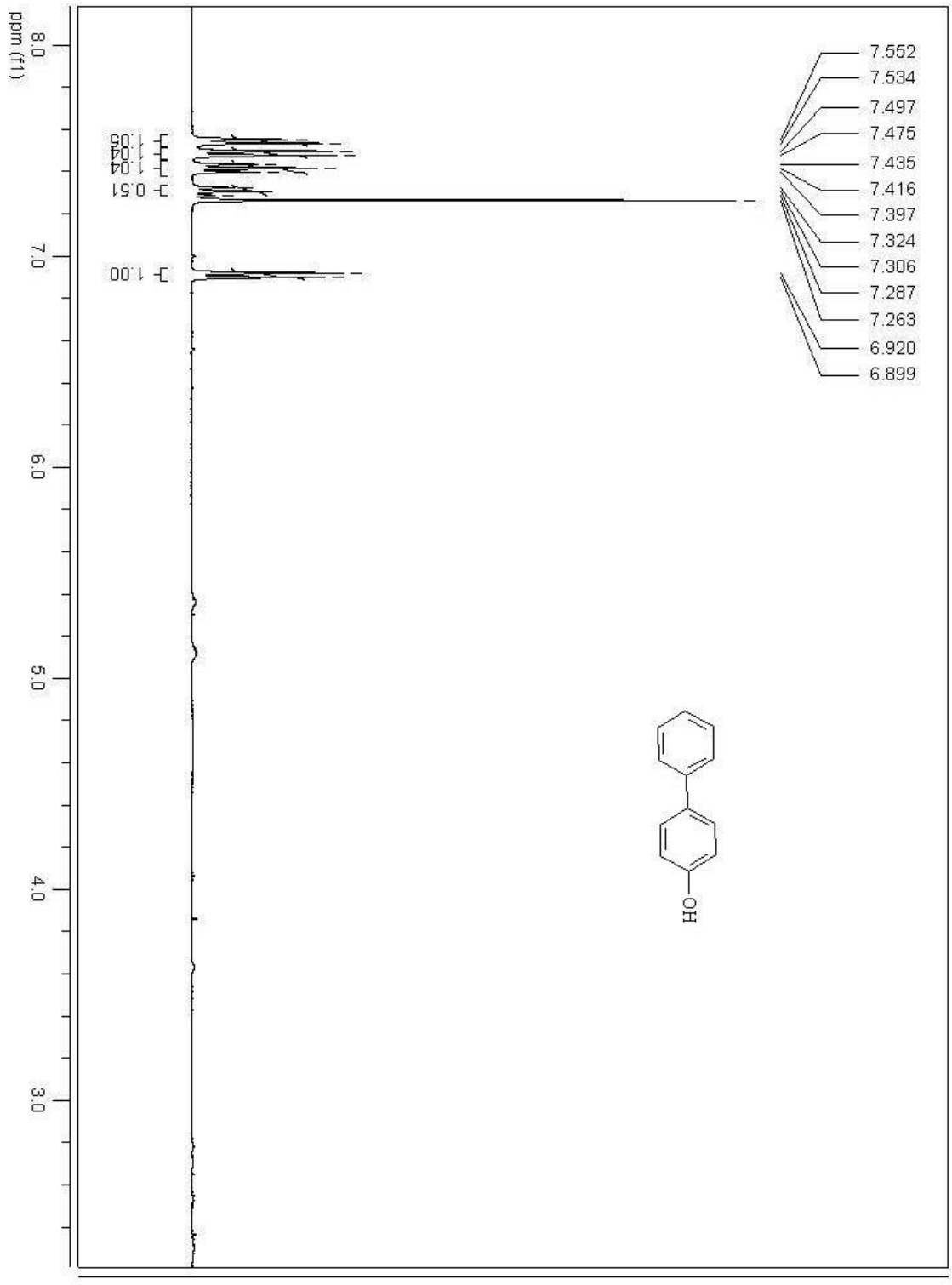

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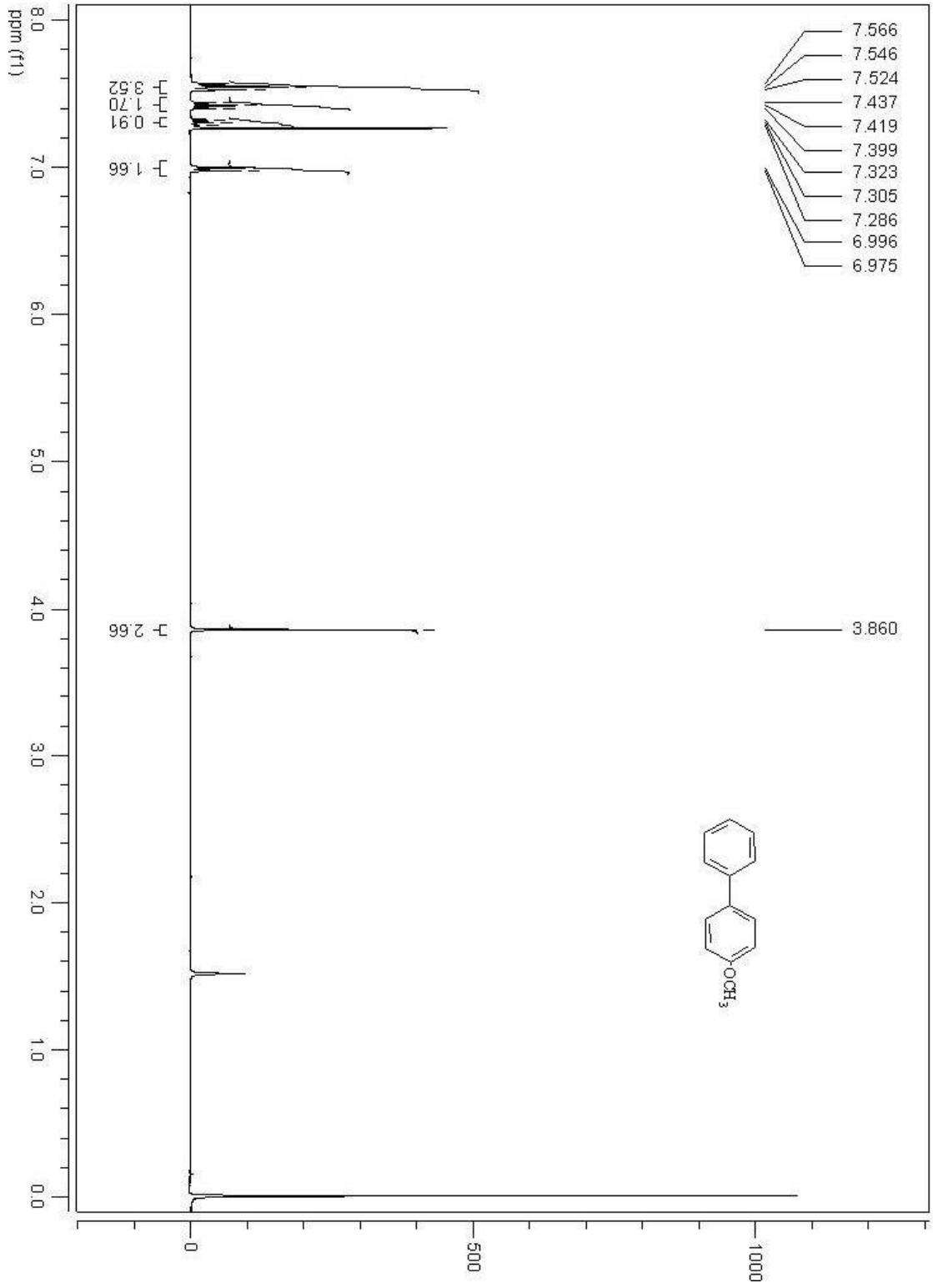

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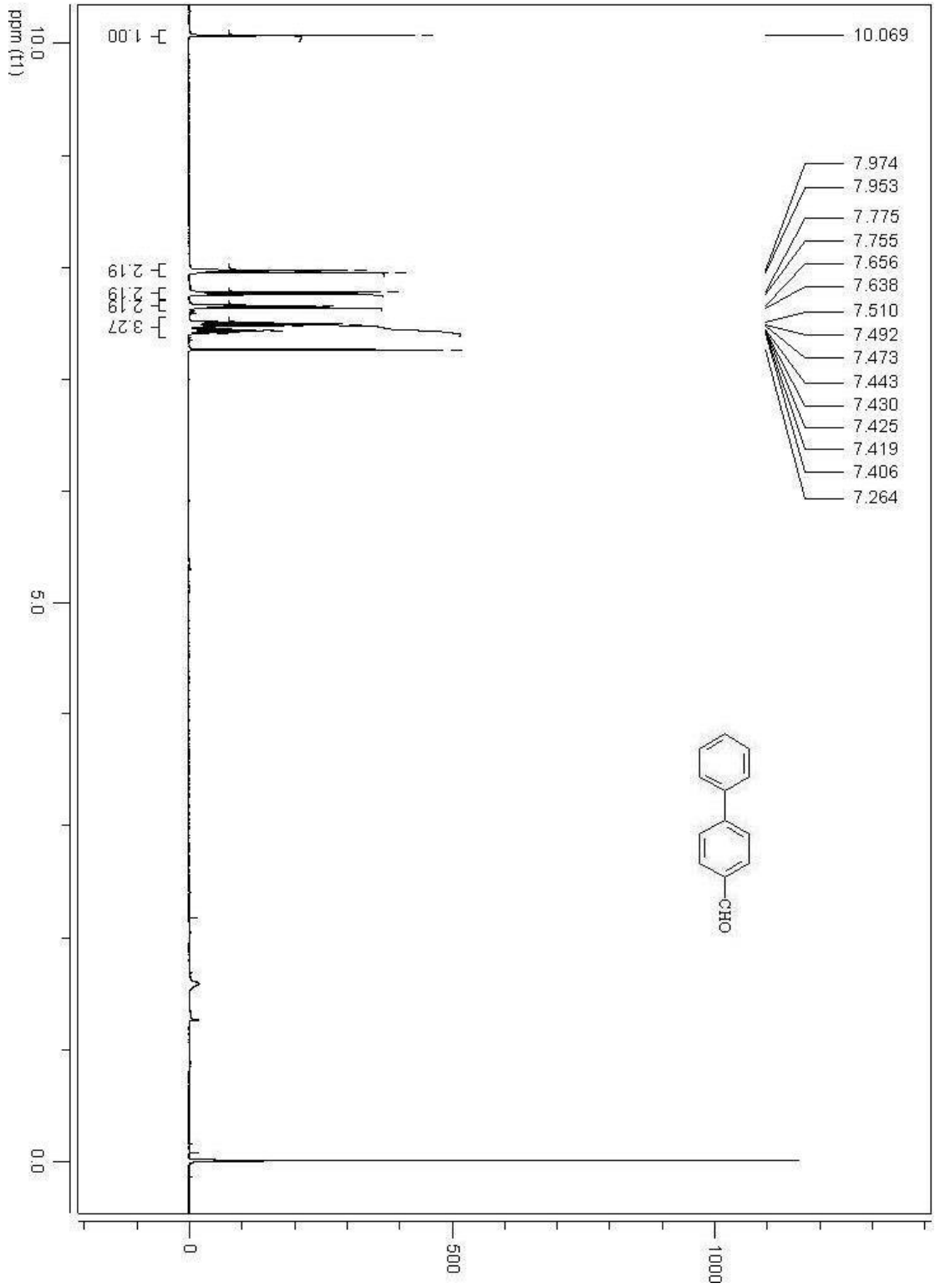

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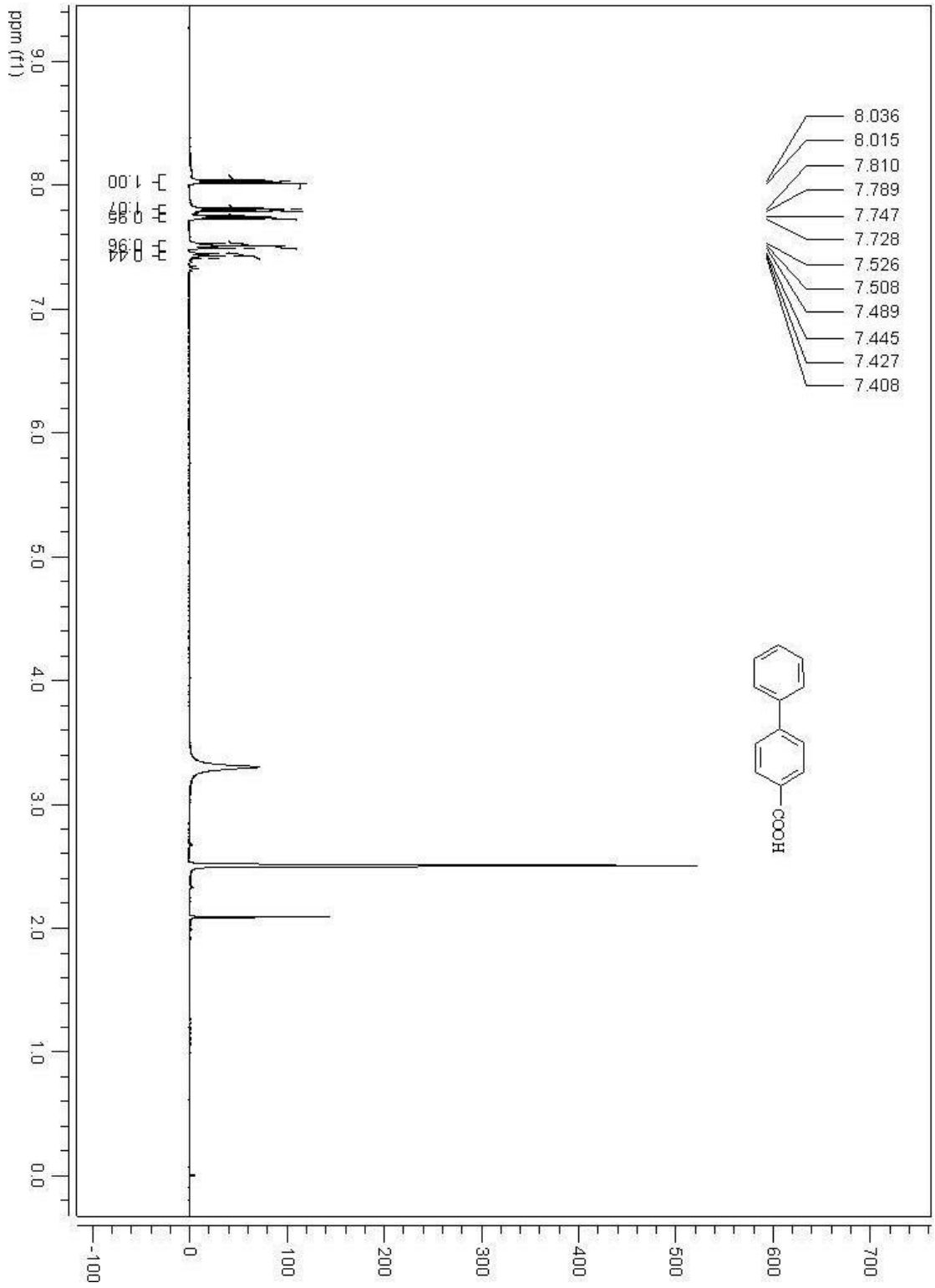

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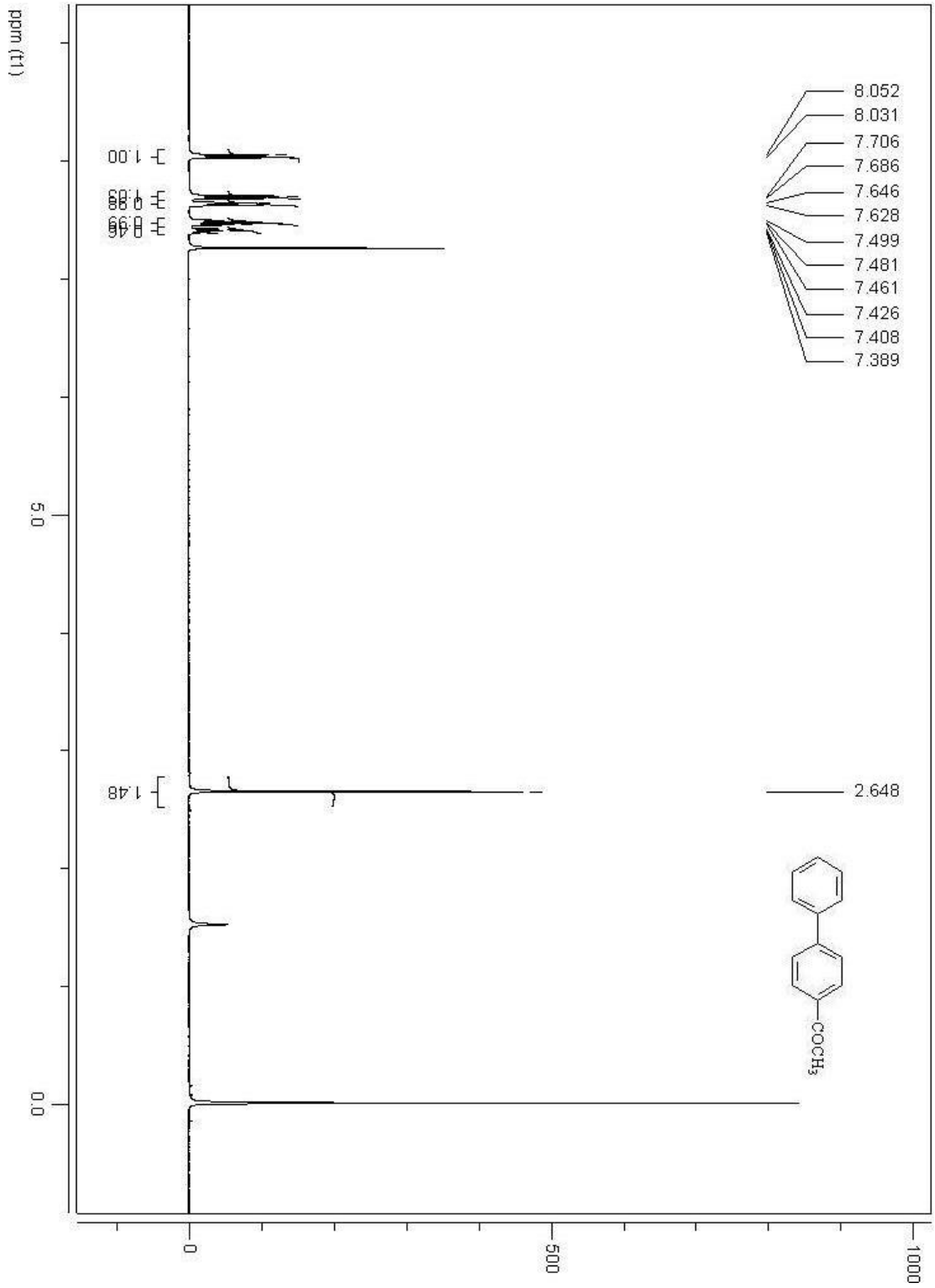

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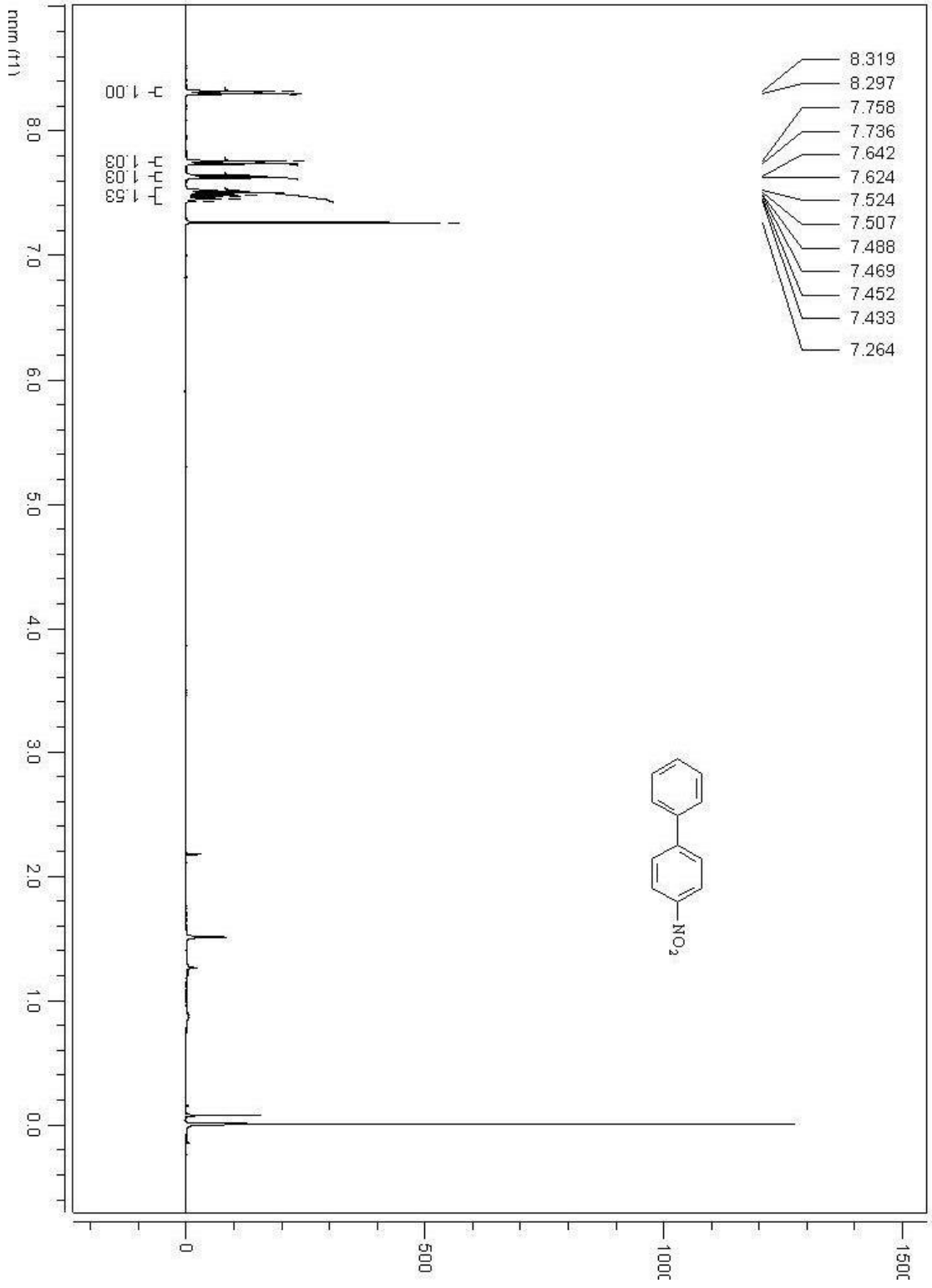

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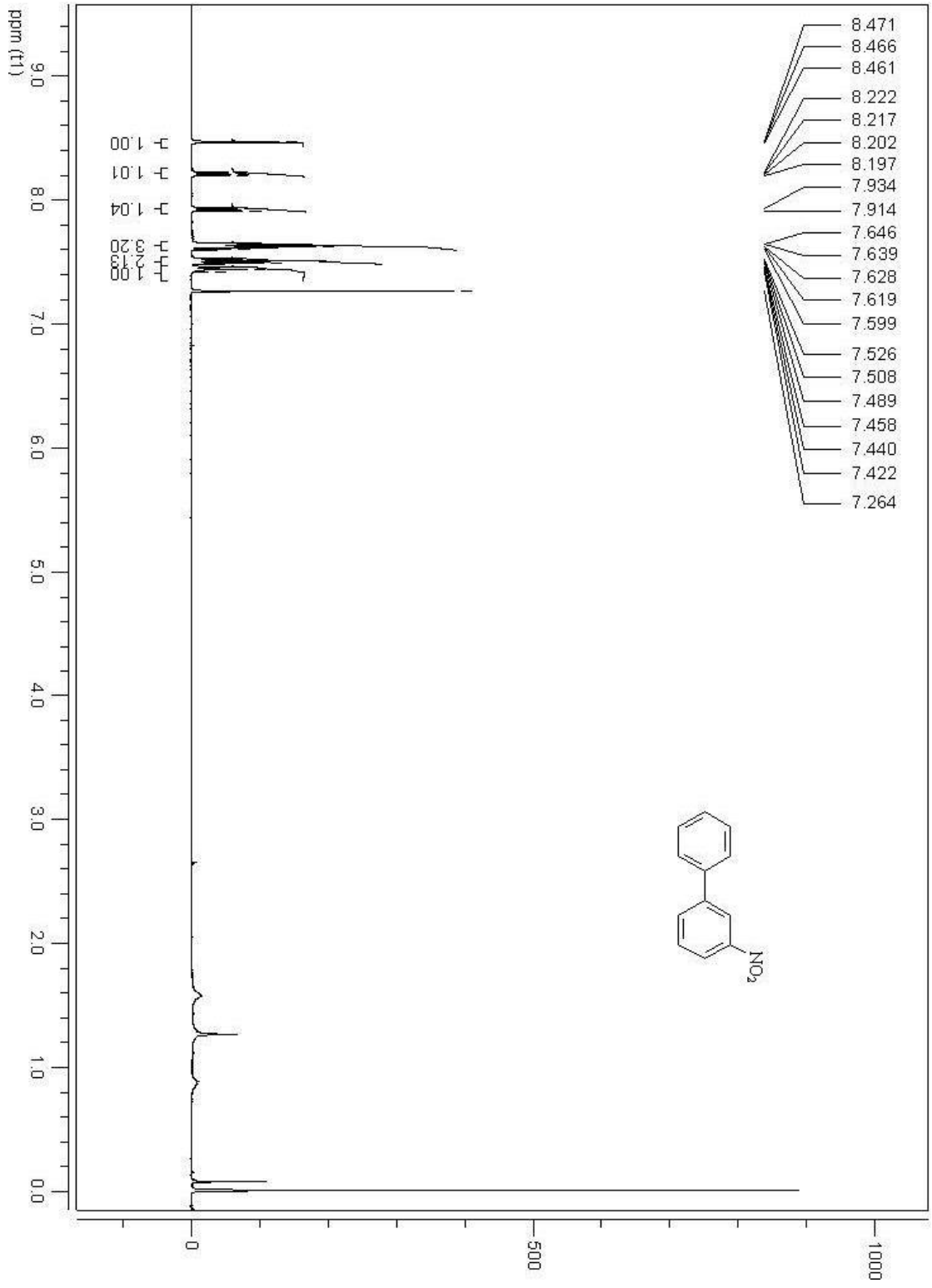

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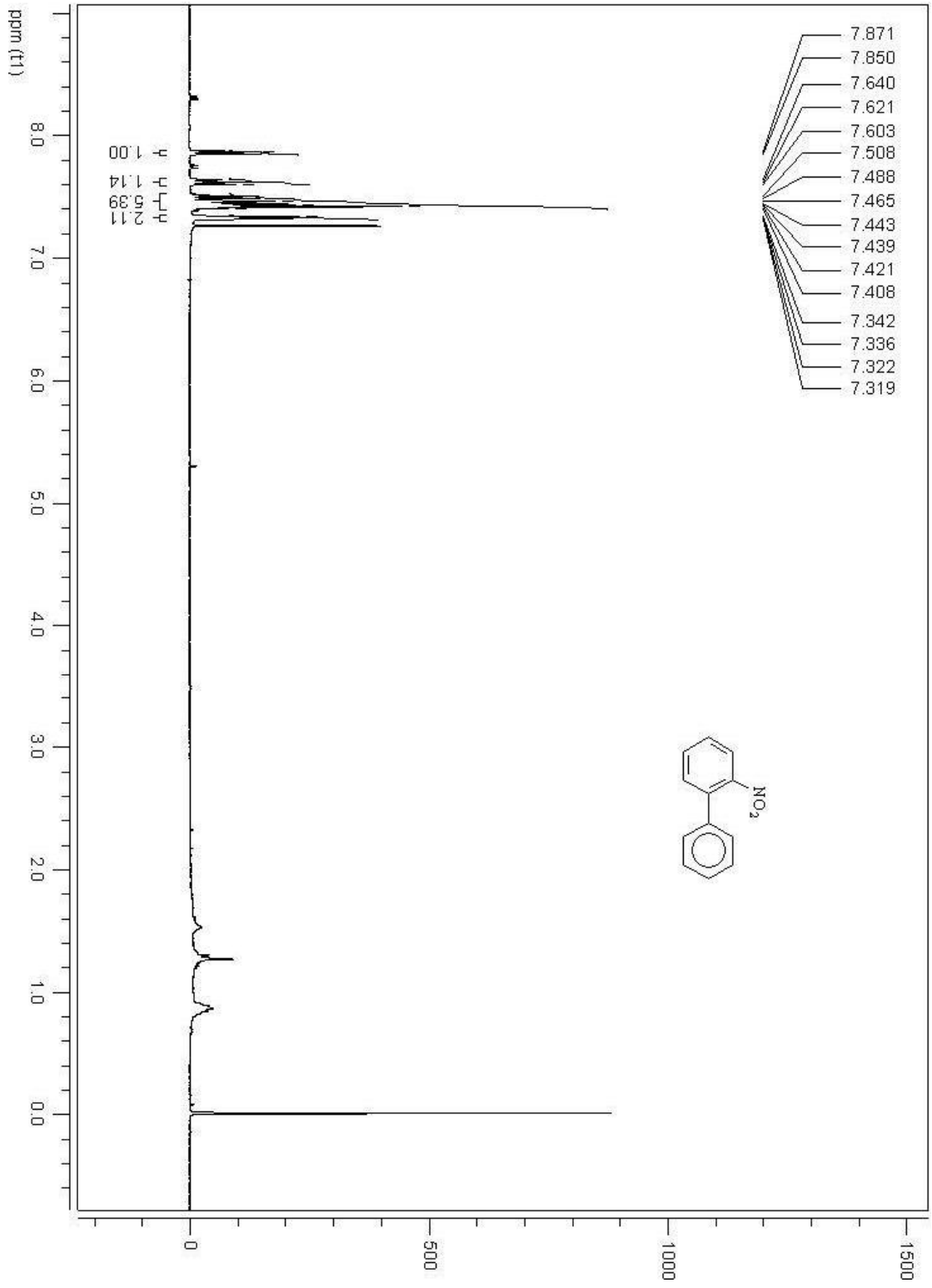

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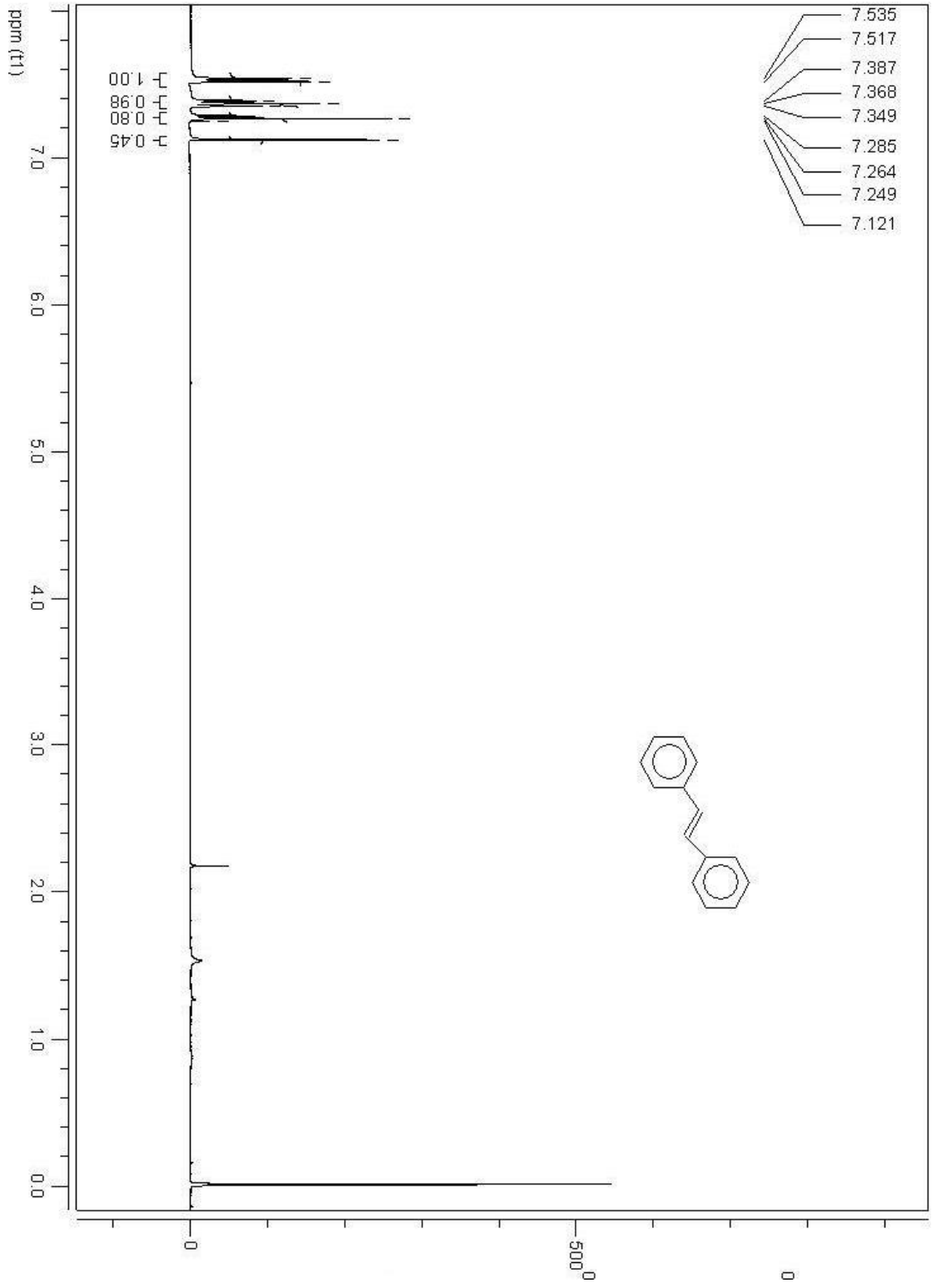

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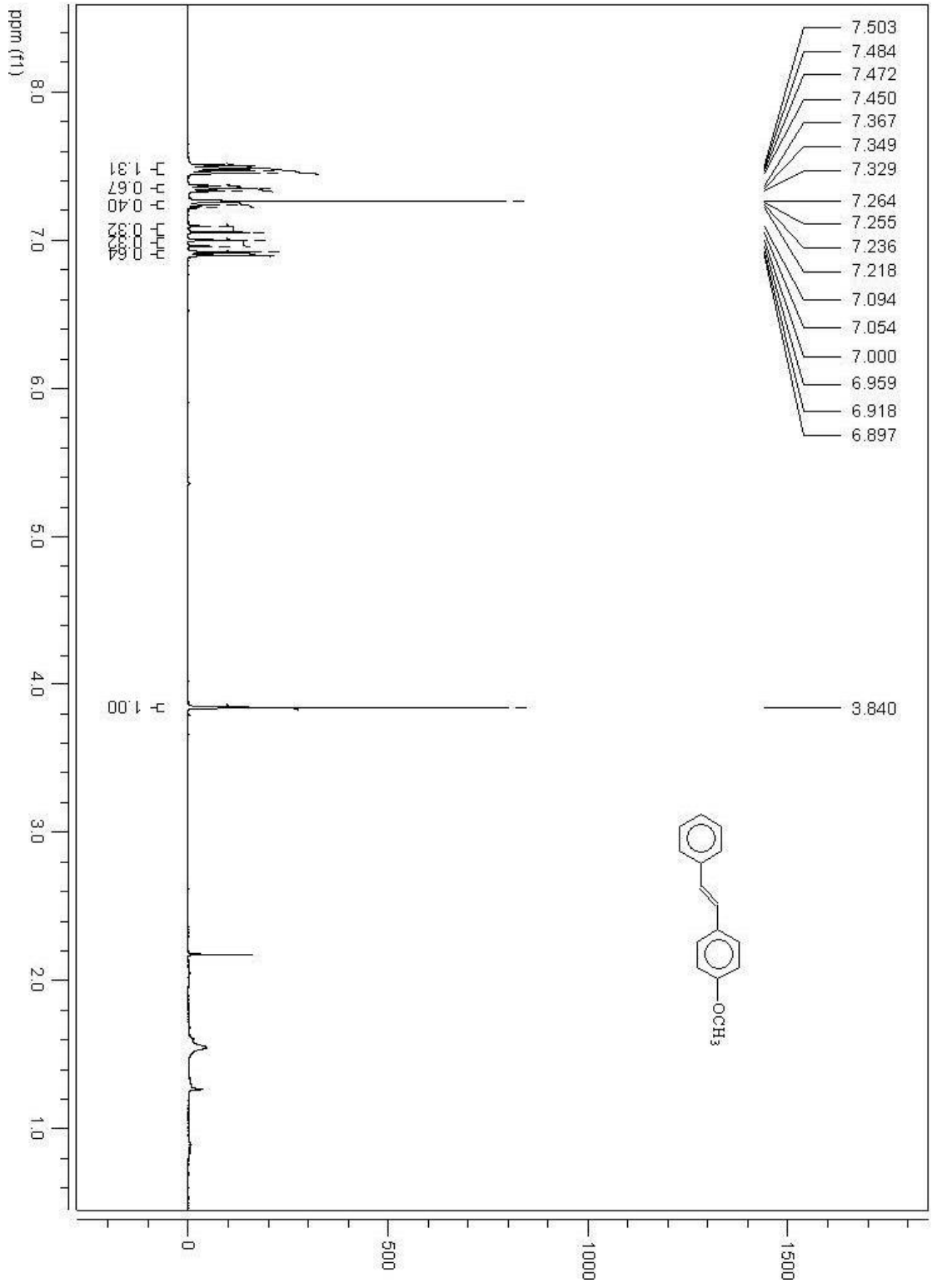

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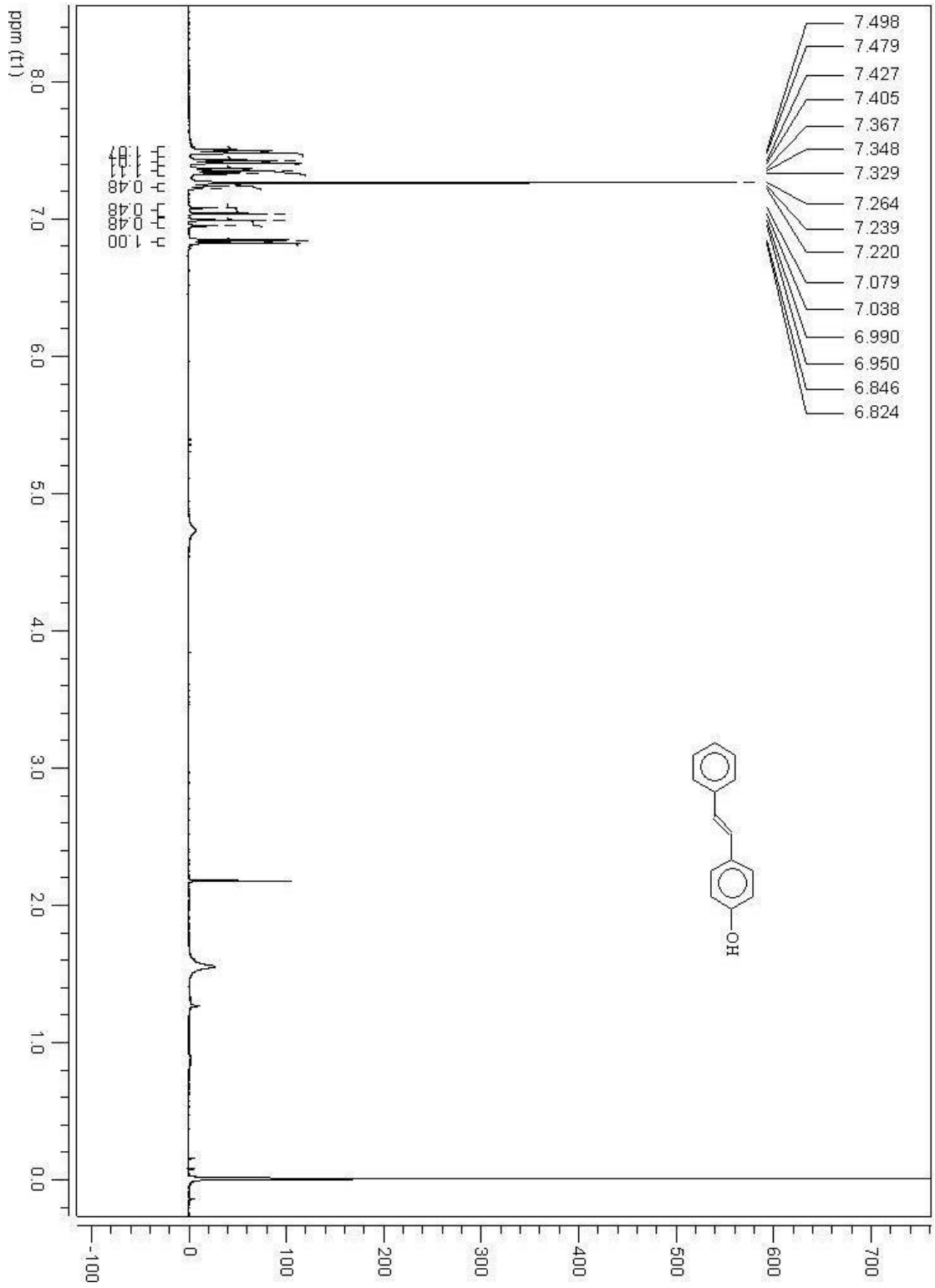

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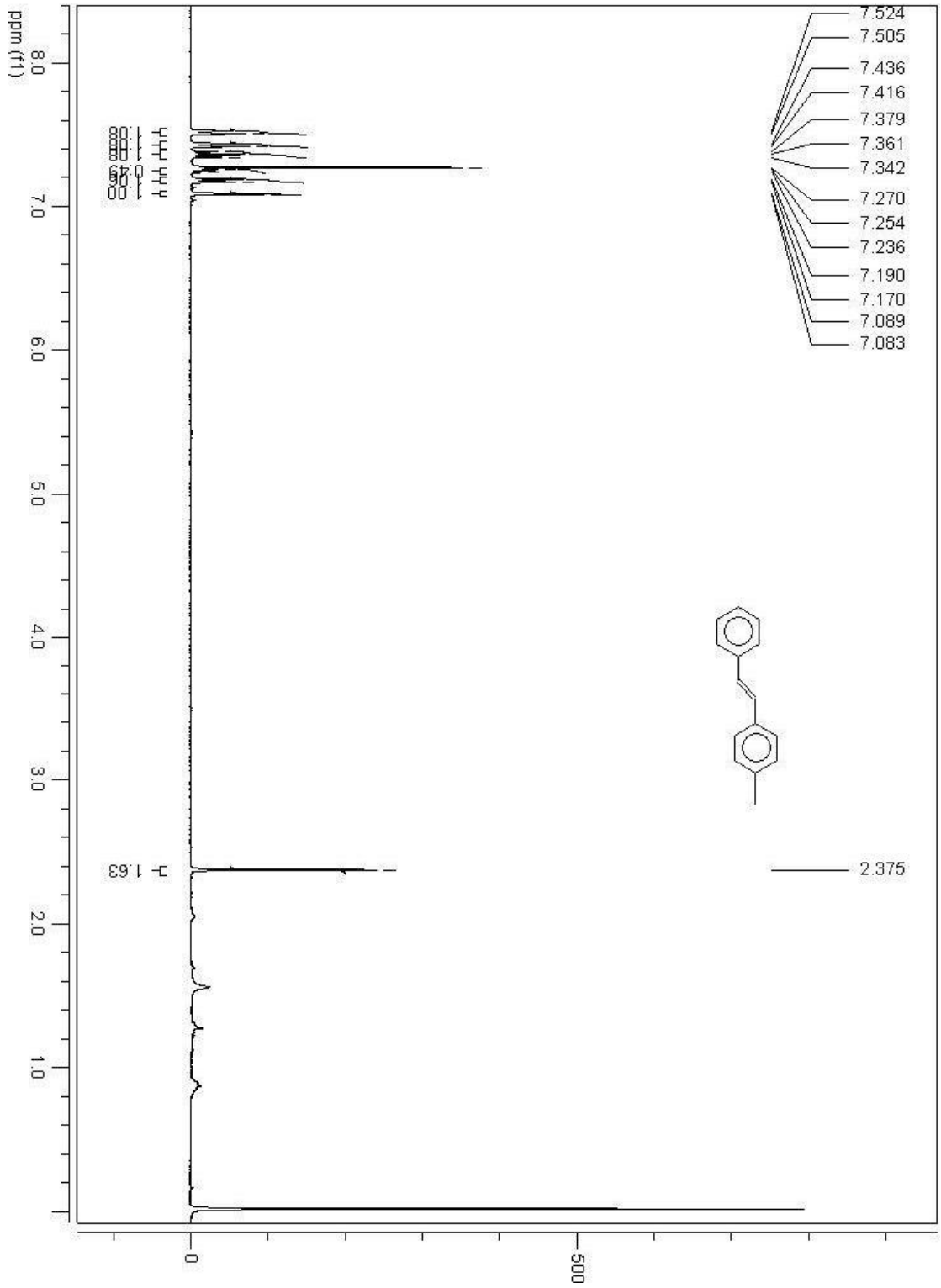

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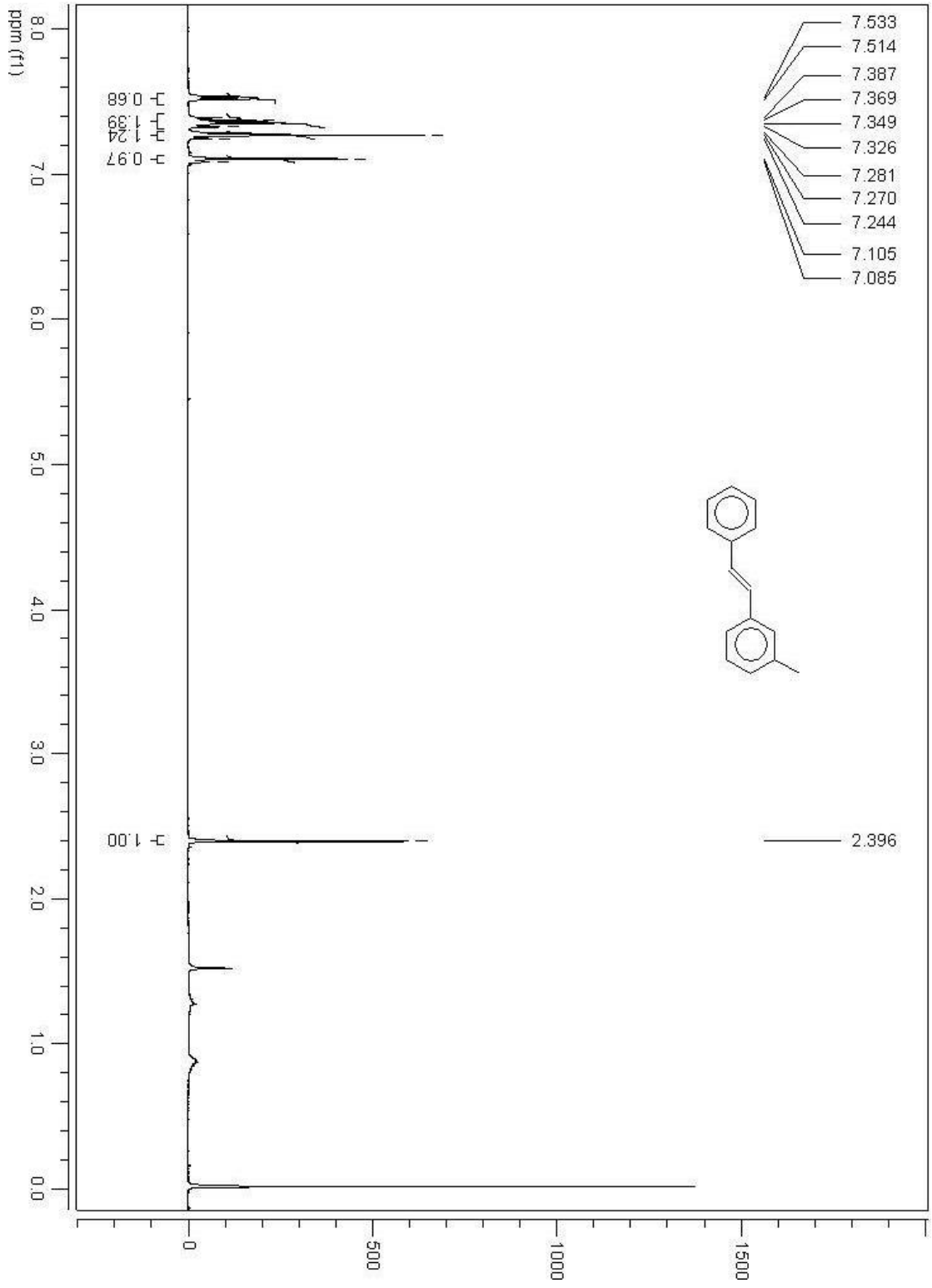

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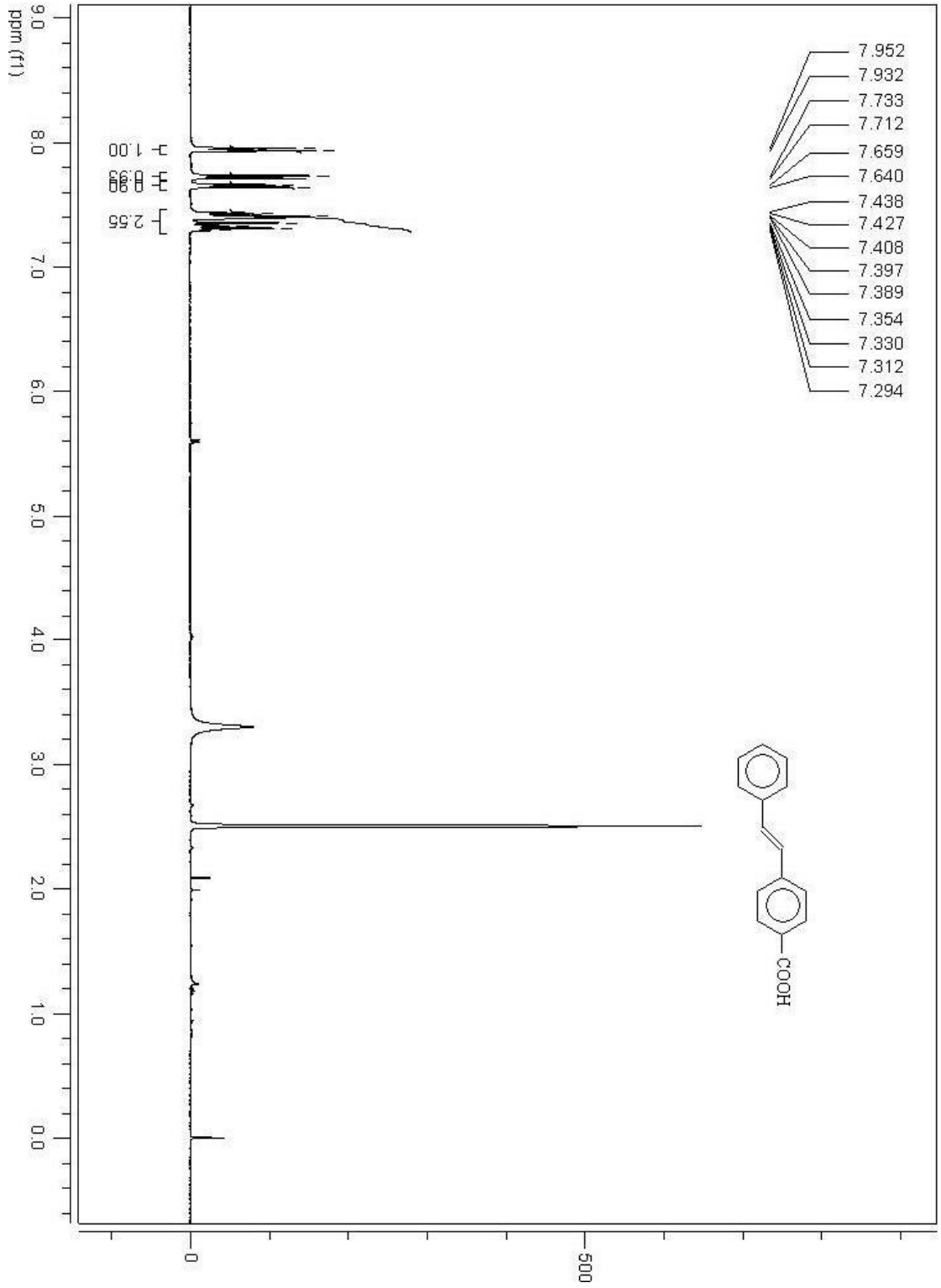

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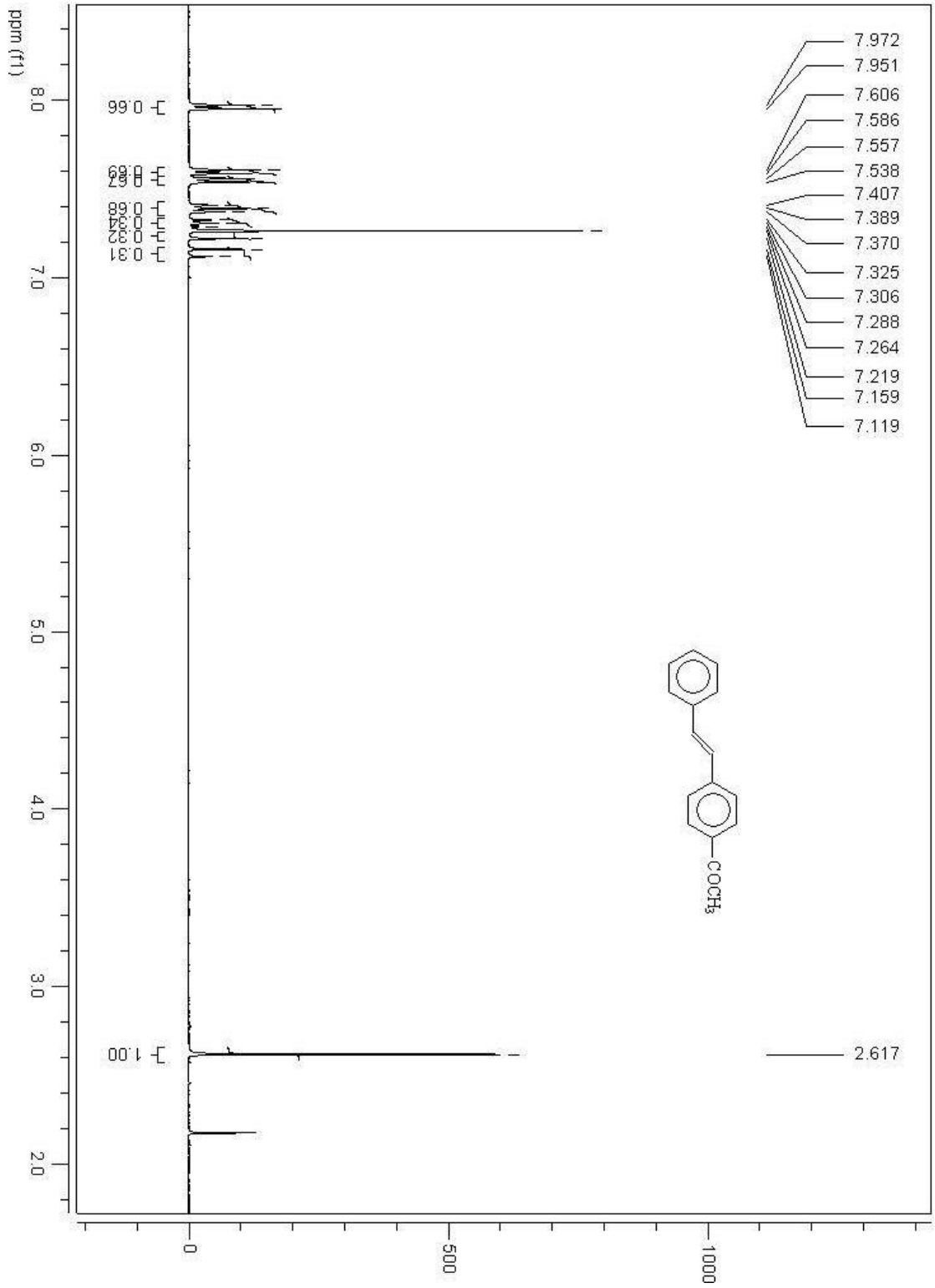

4-nitro-*trans*-stilbene (17)