Synthesis and Evaluation of New Pyrazoline Derivatives as Potential Anticancer Agents in HepG-2 Cell Line

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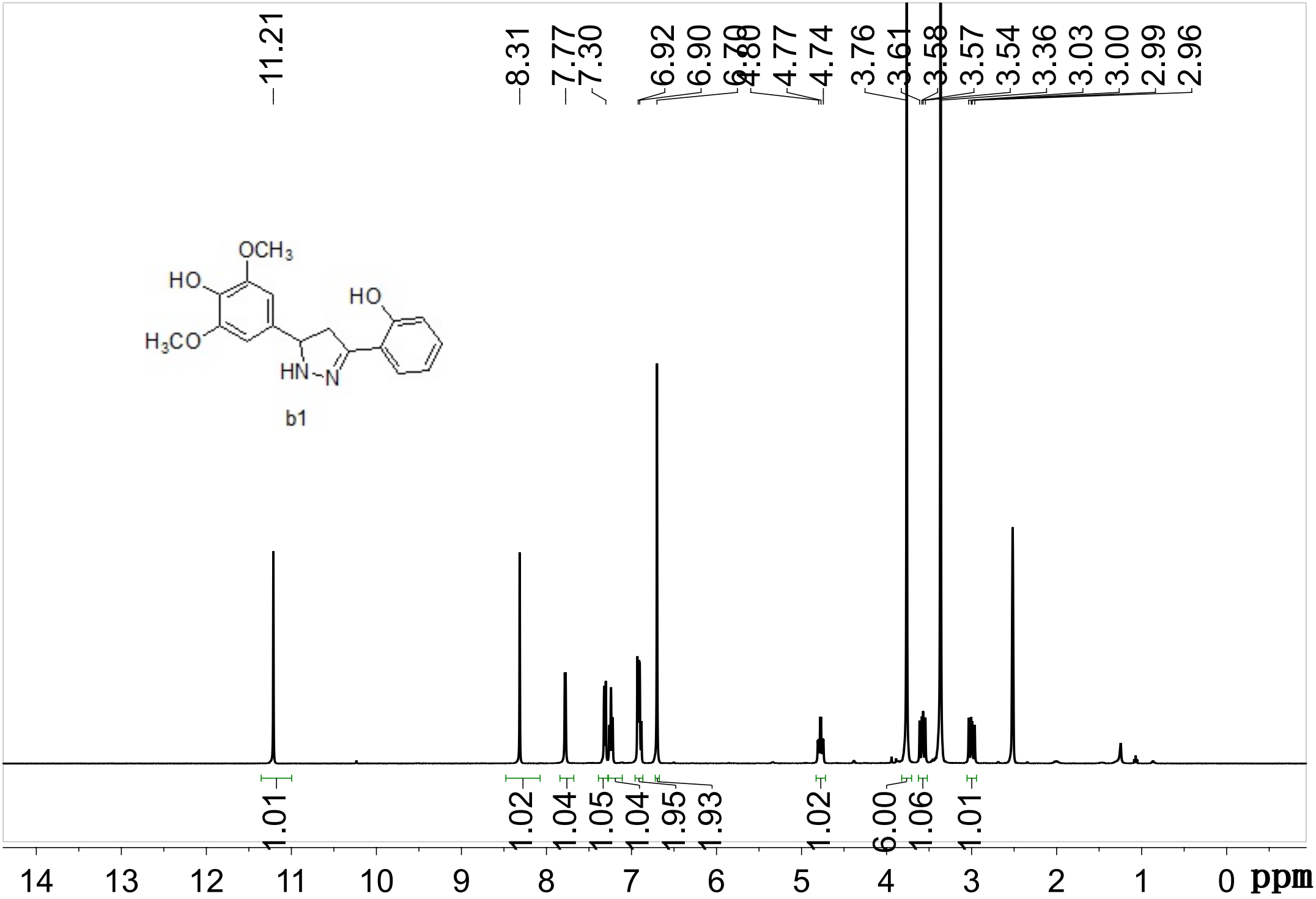
† These authors contributed equally to this work.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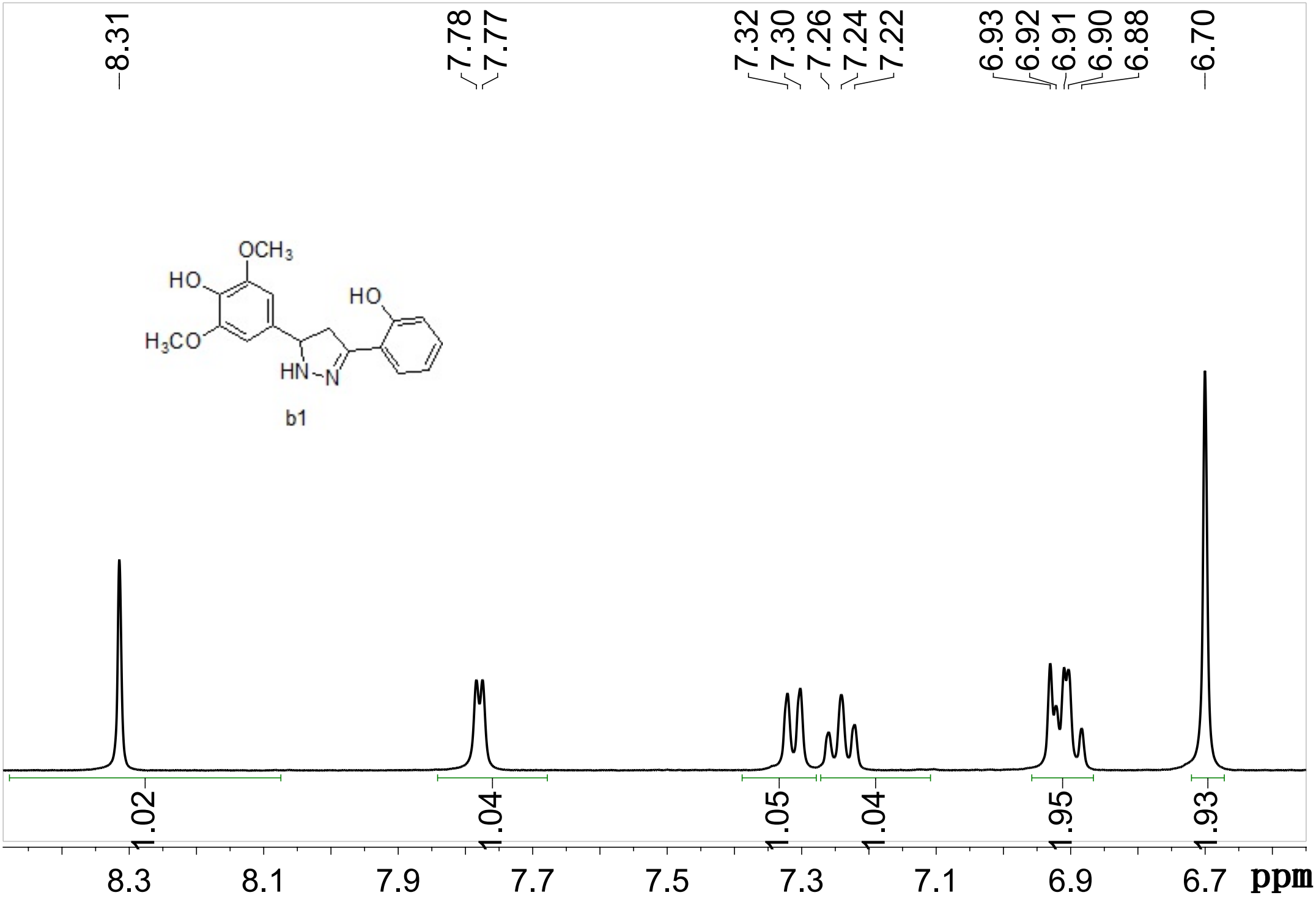
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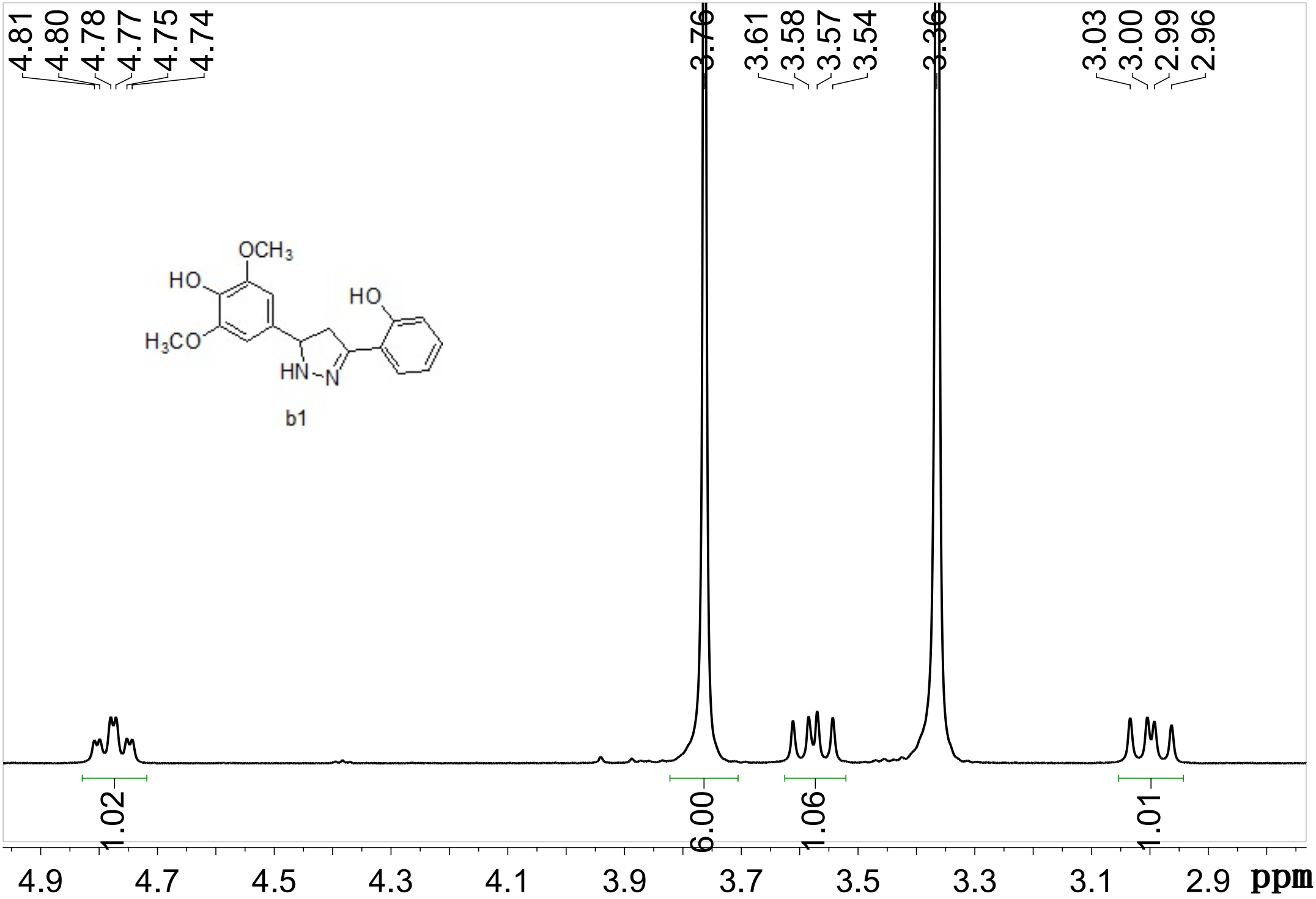
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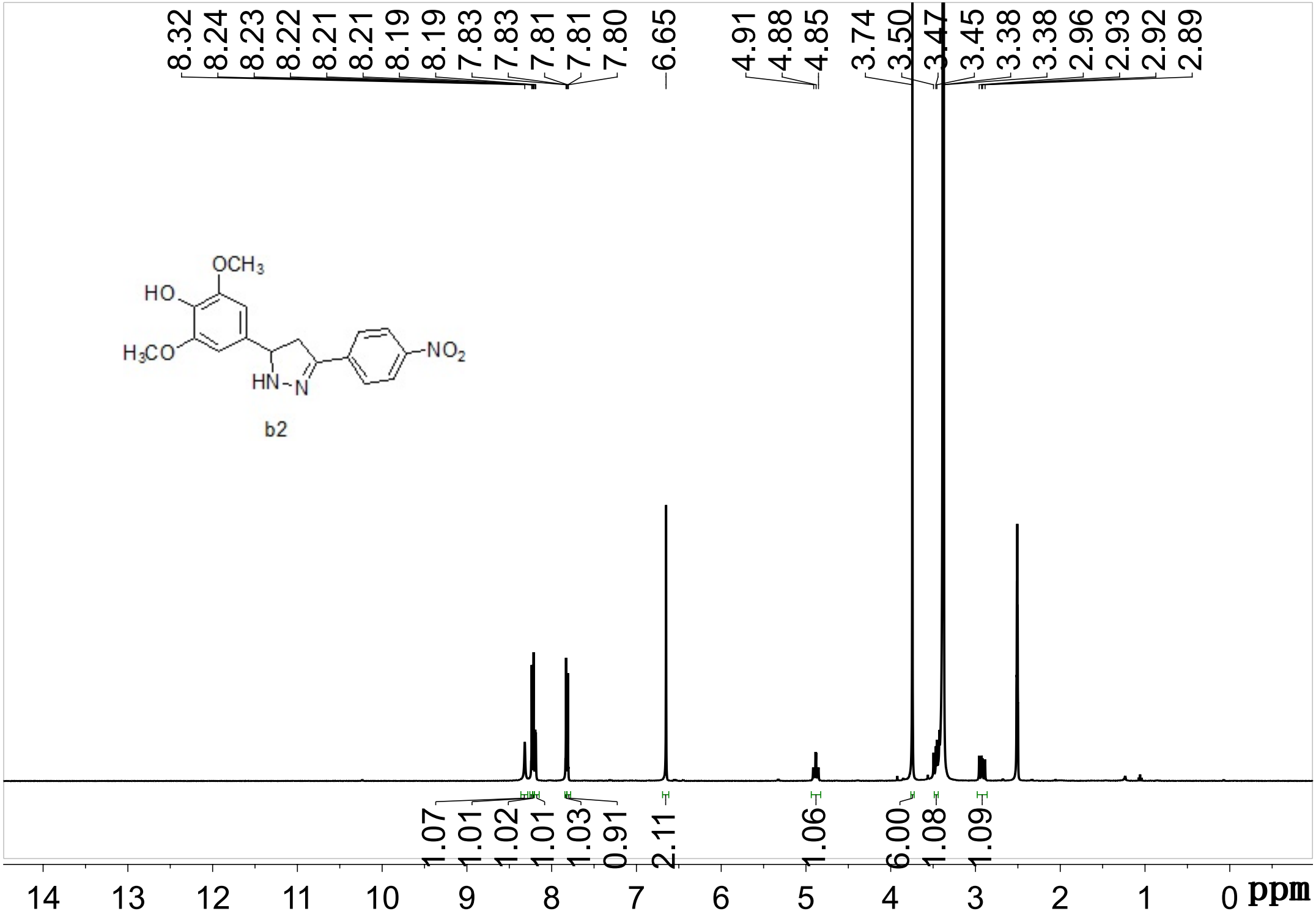
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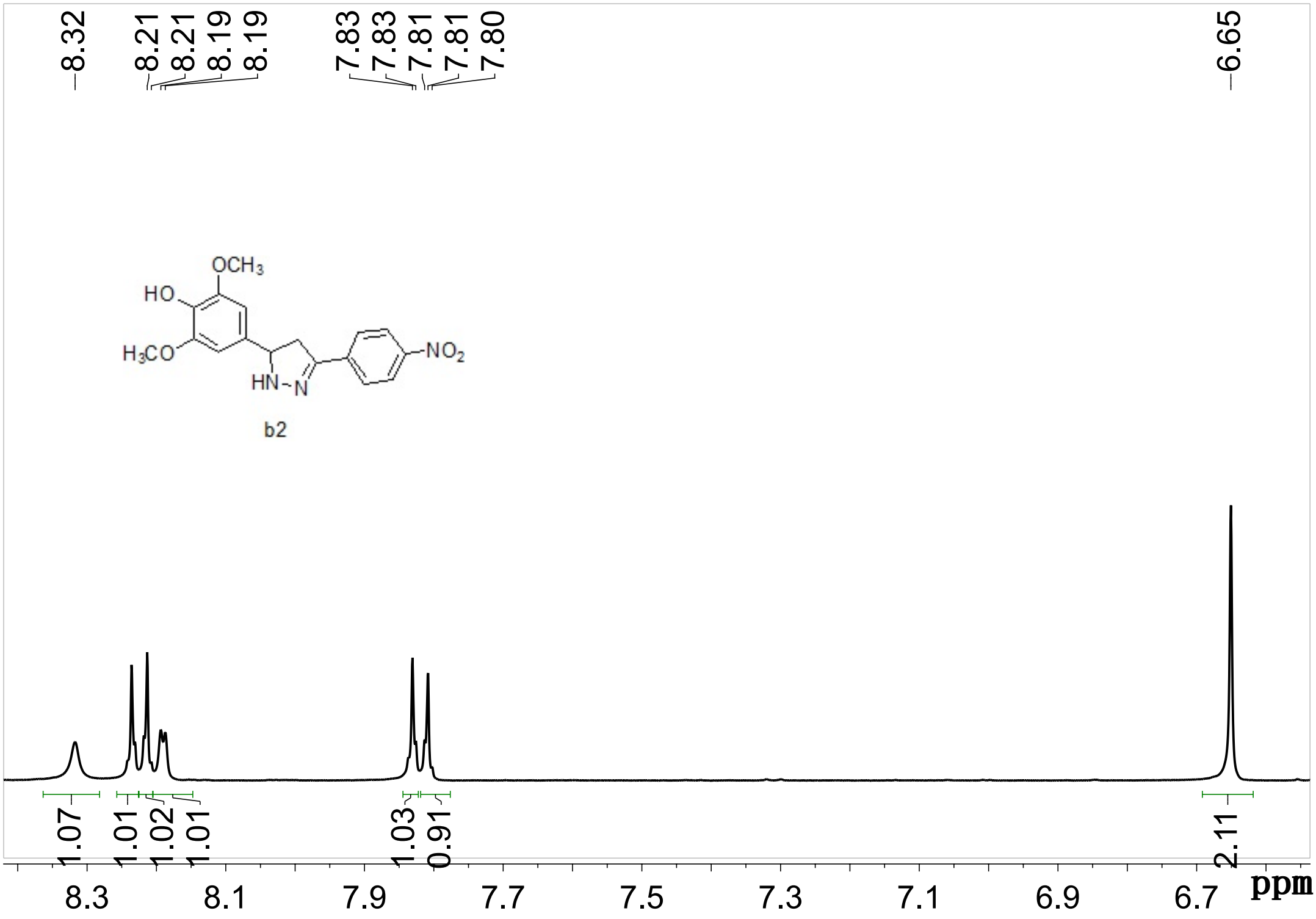
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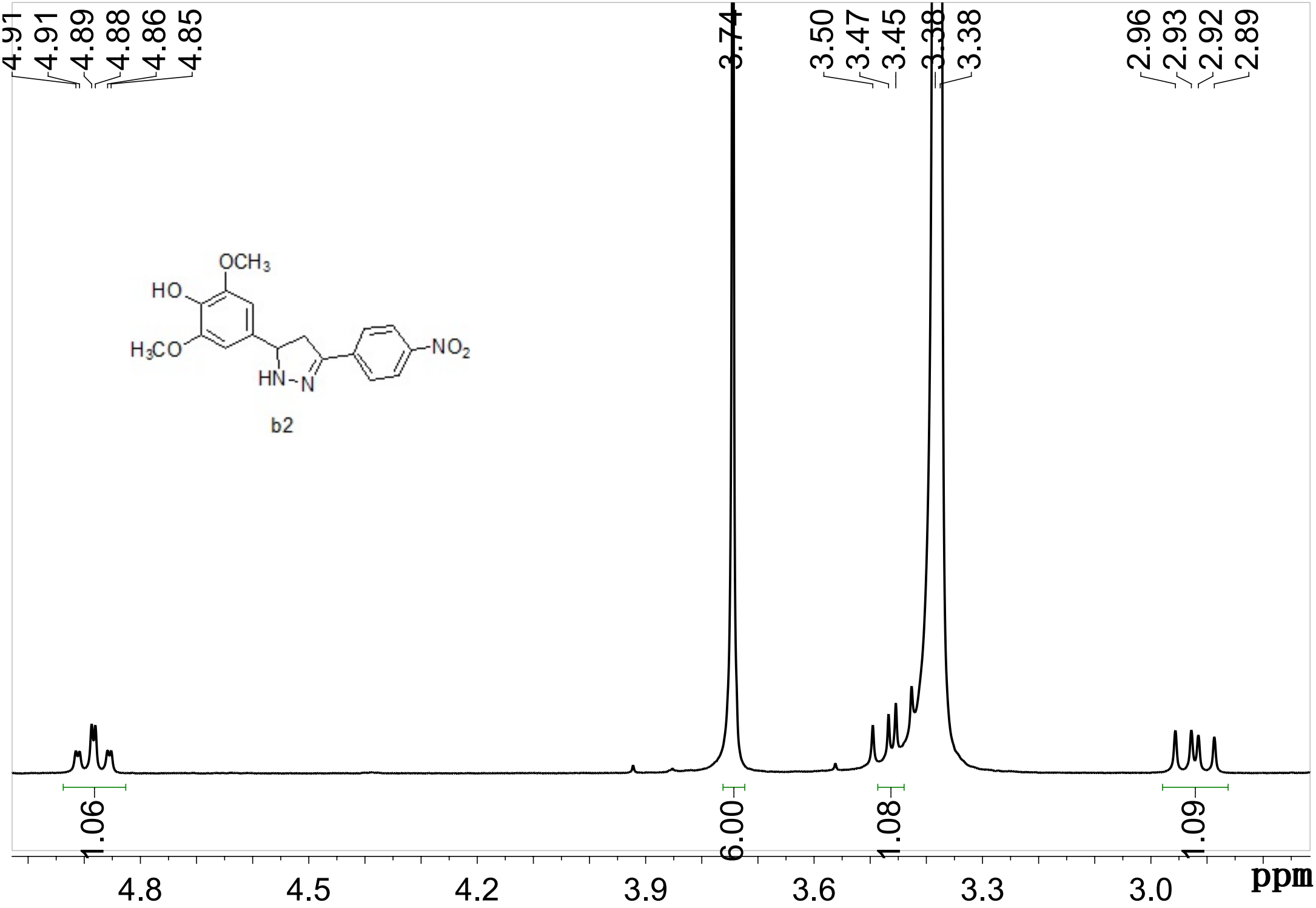
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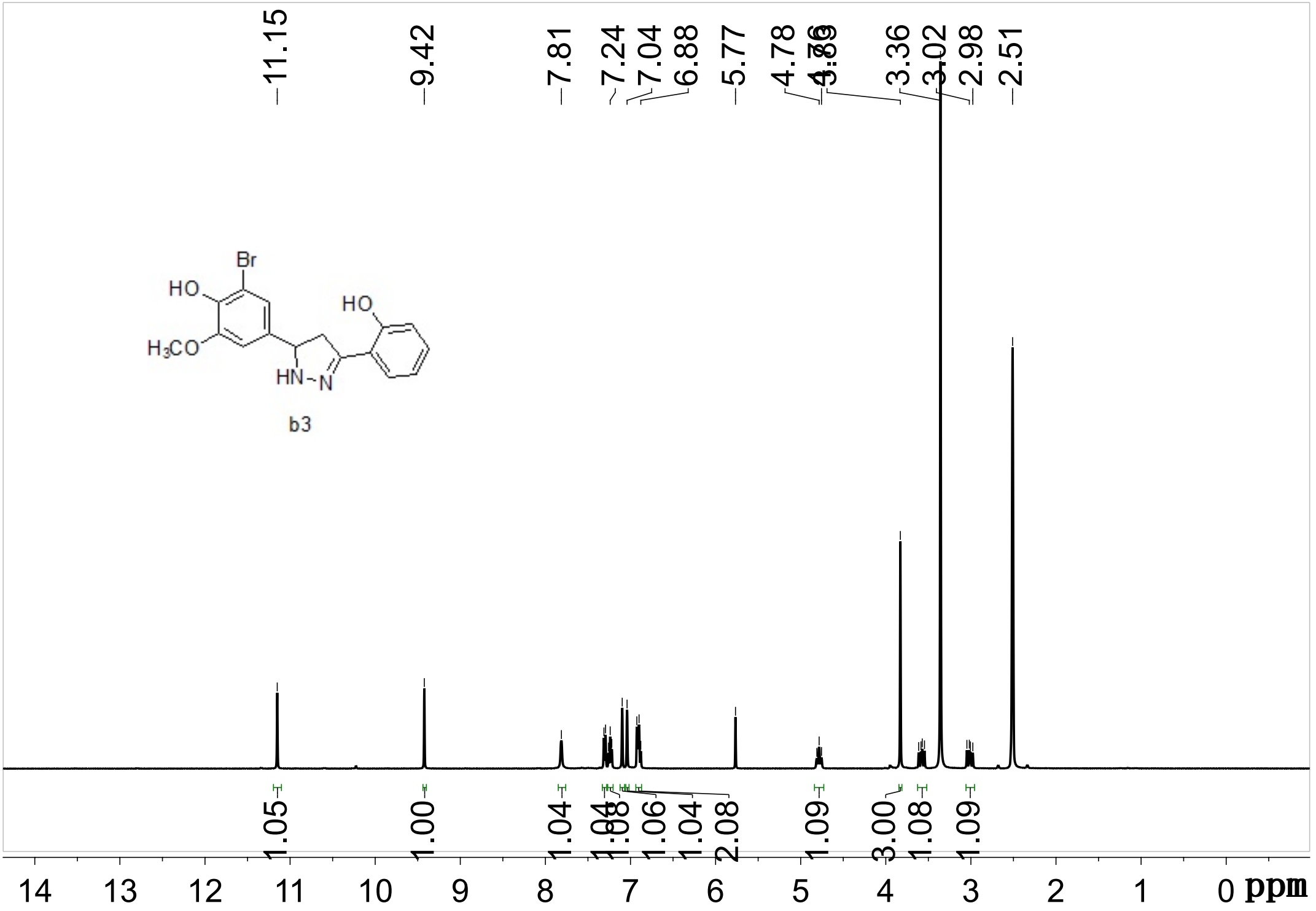
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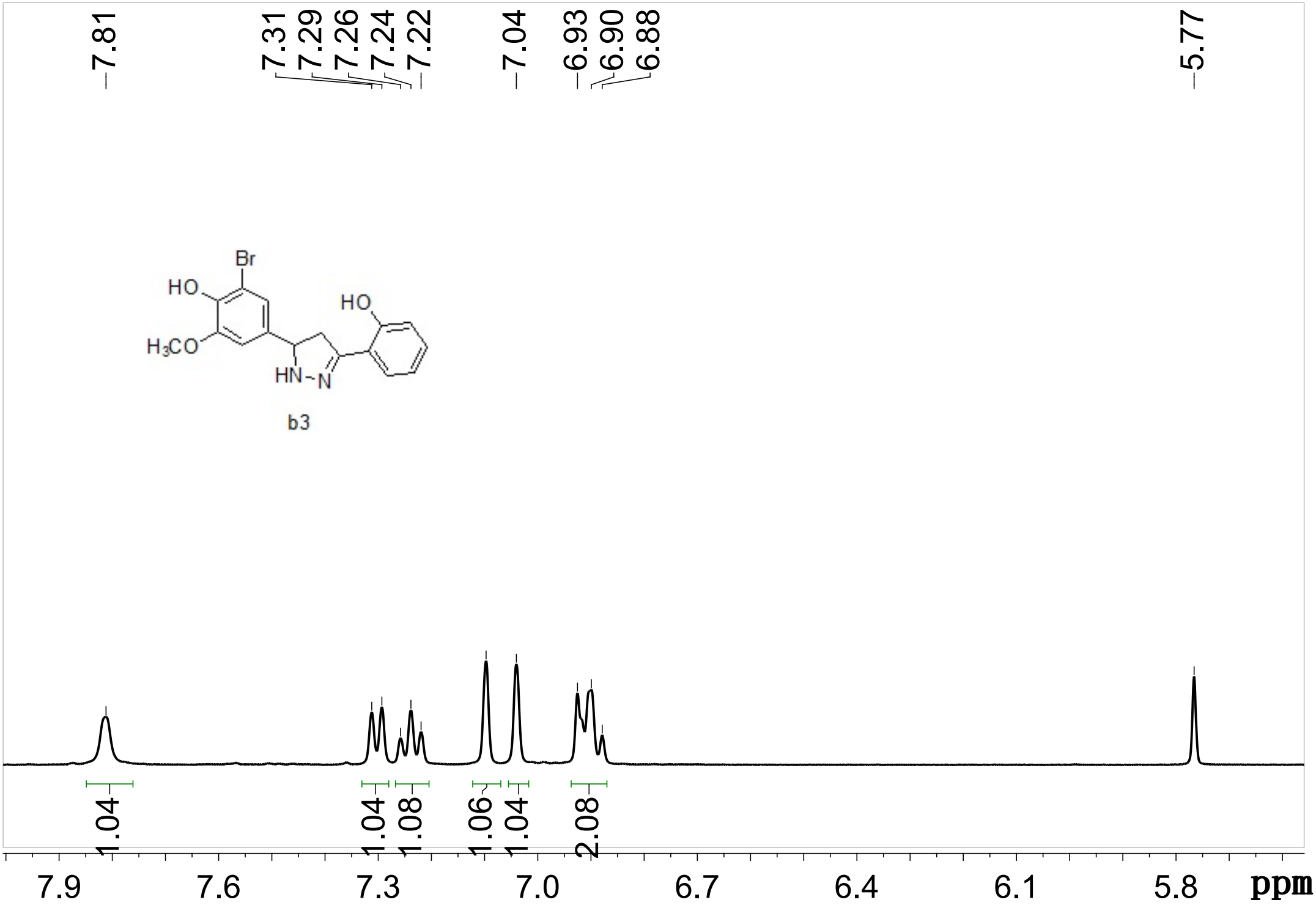
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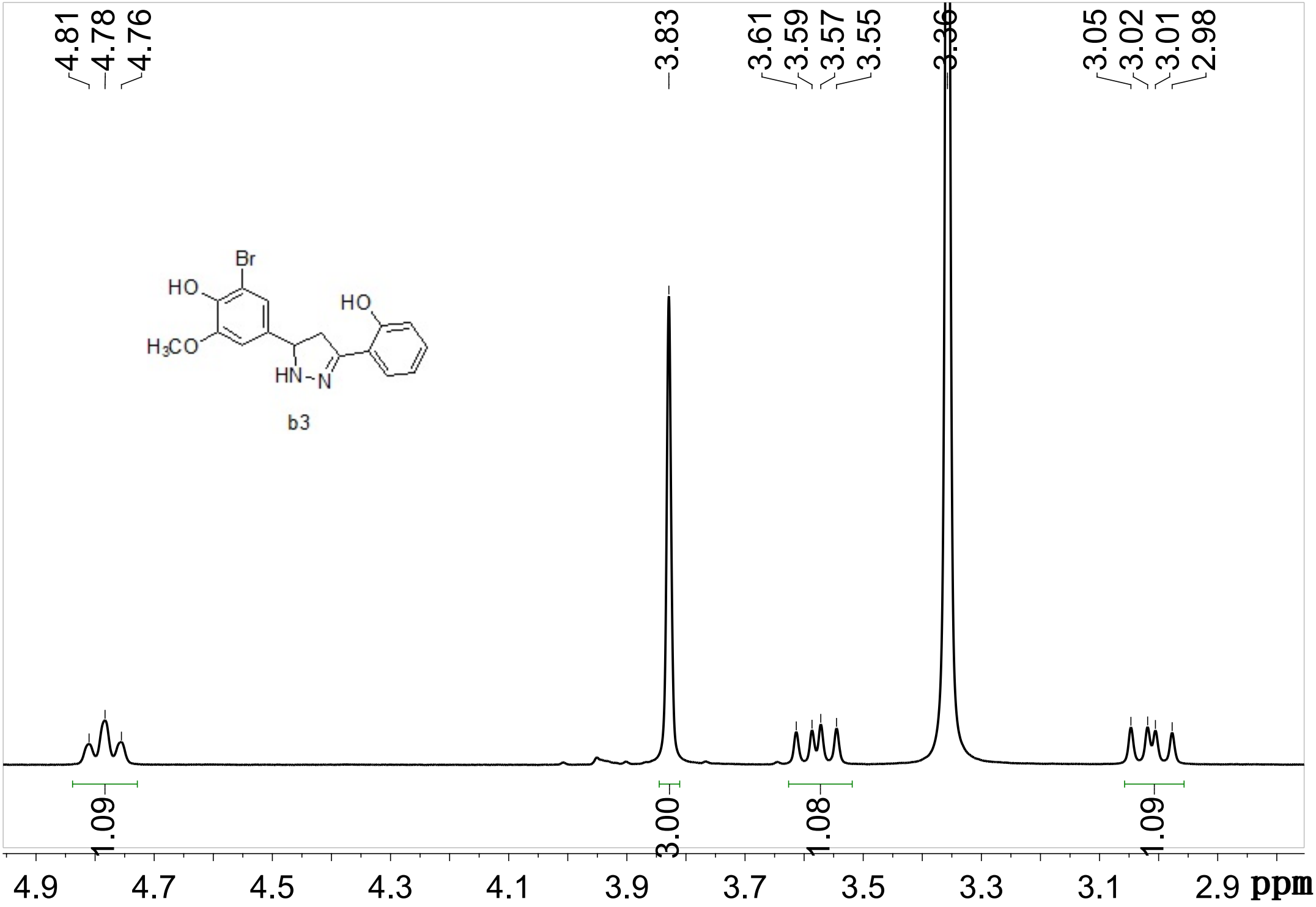
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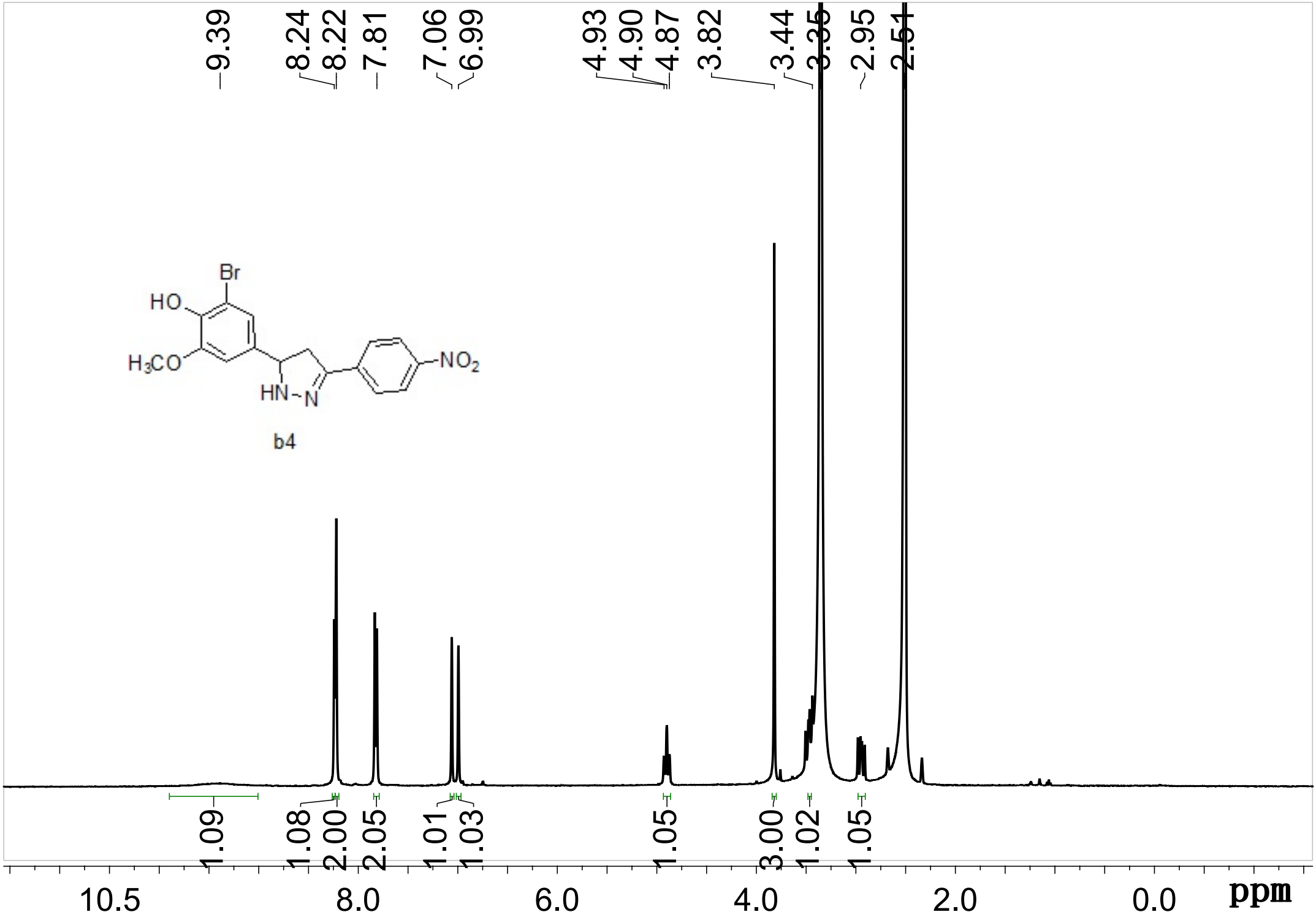
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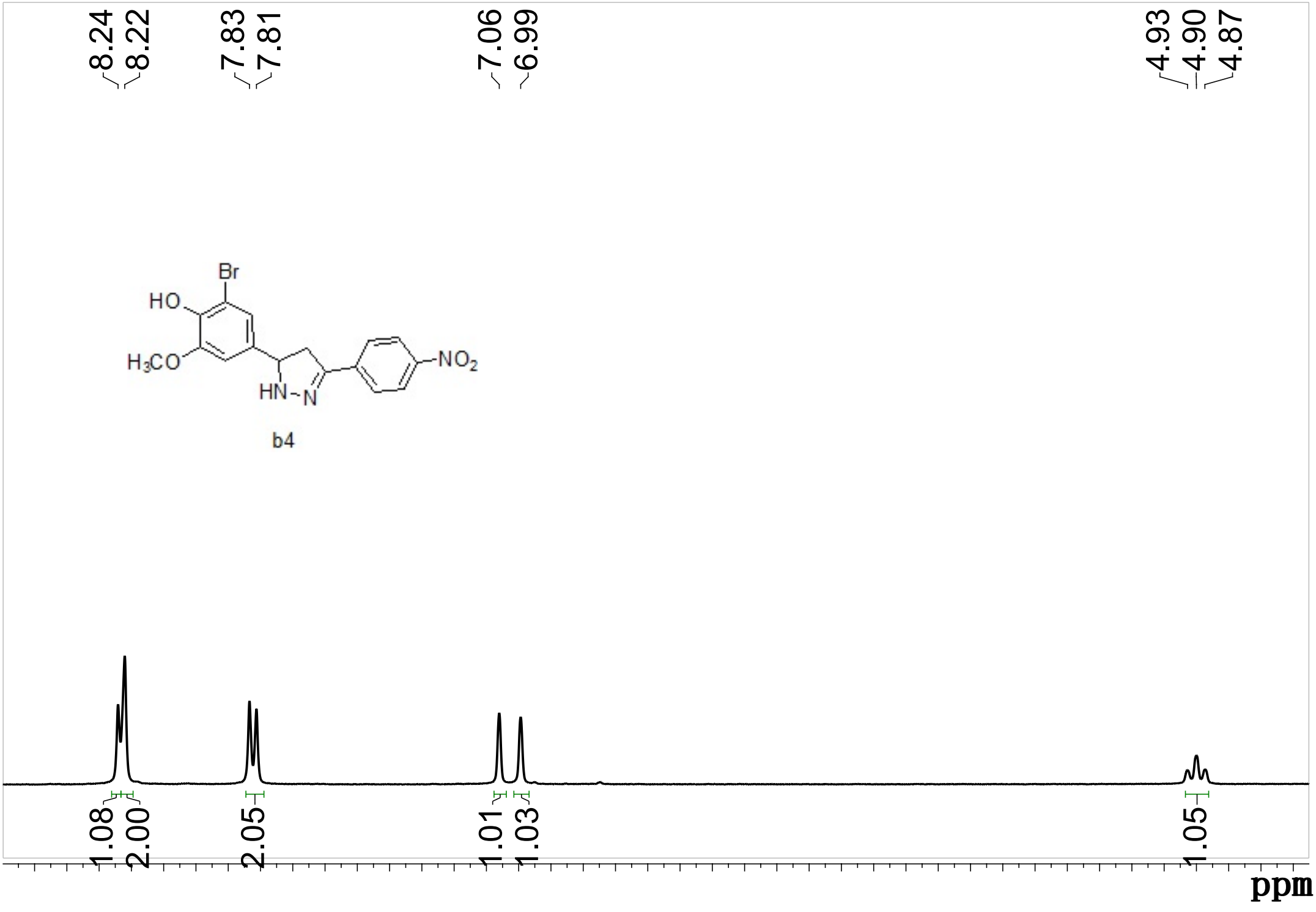
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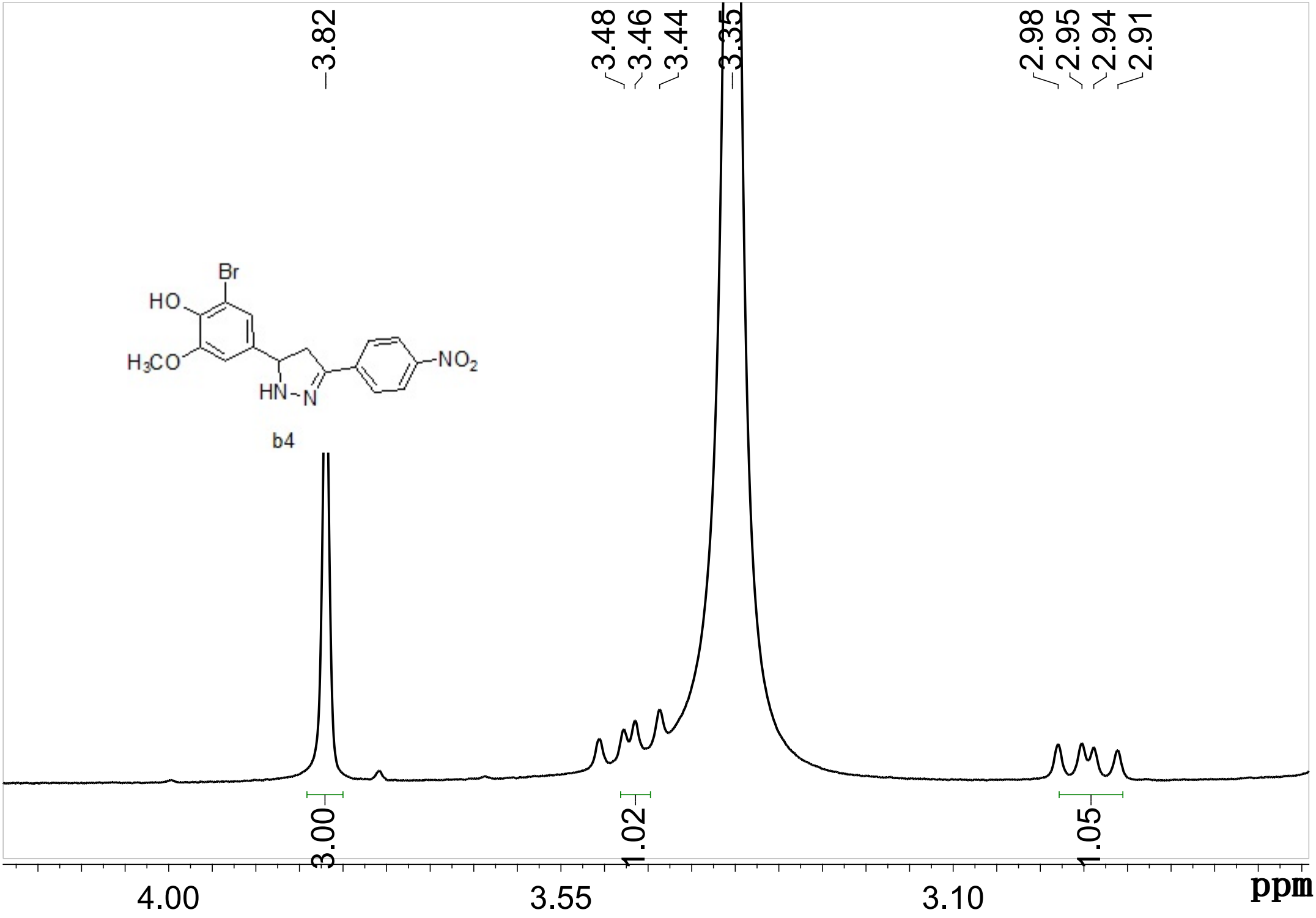
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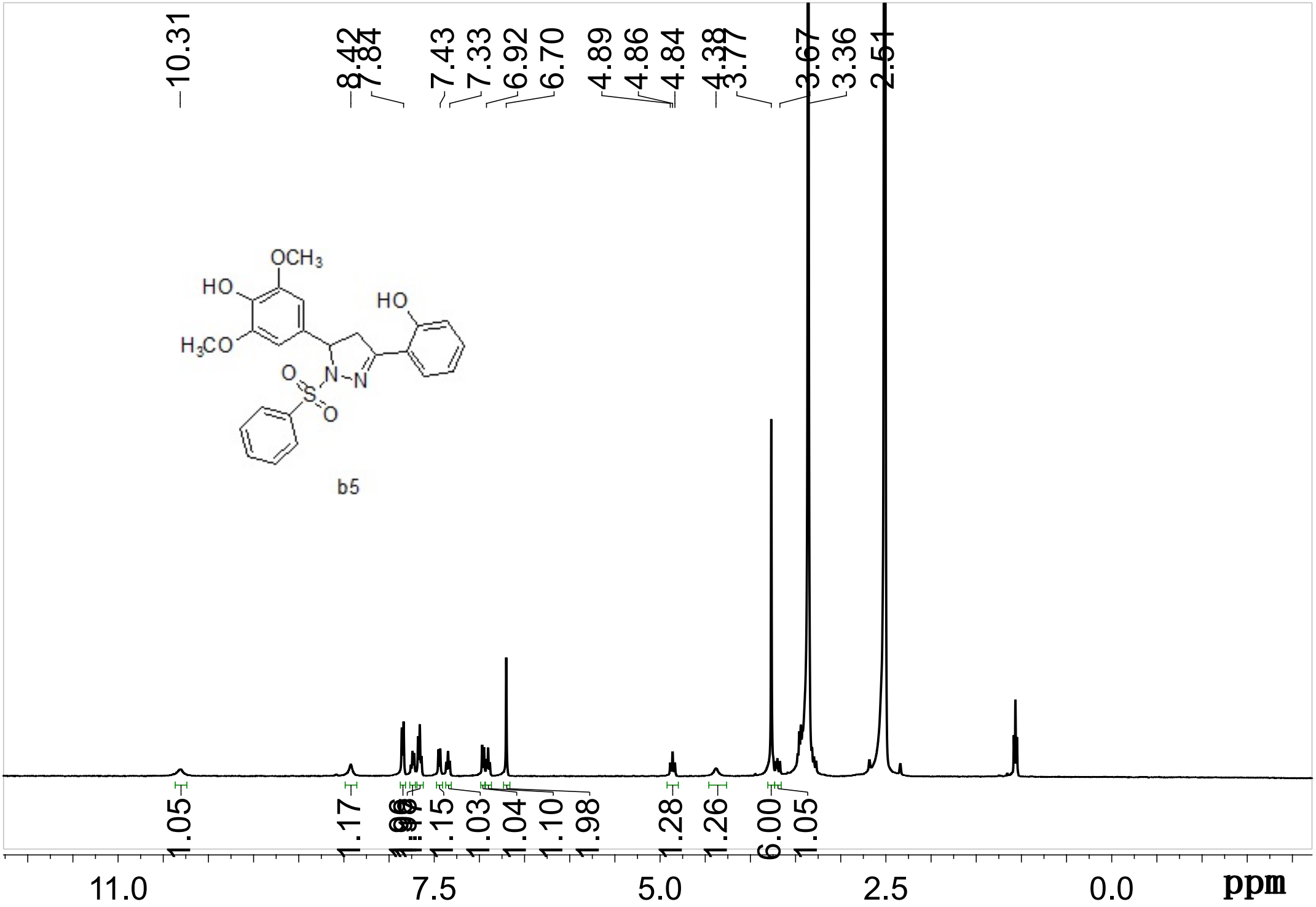
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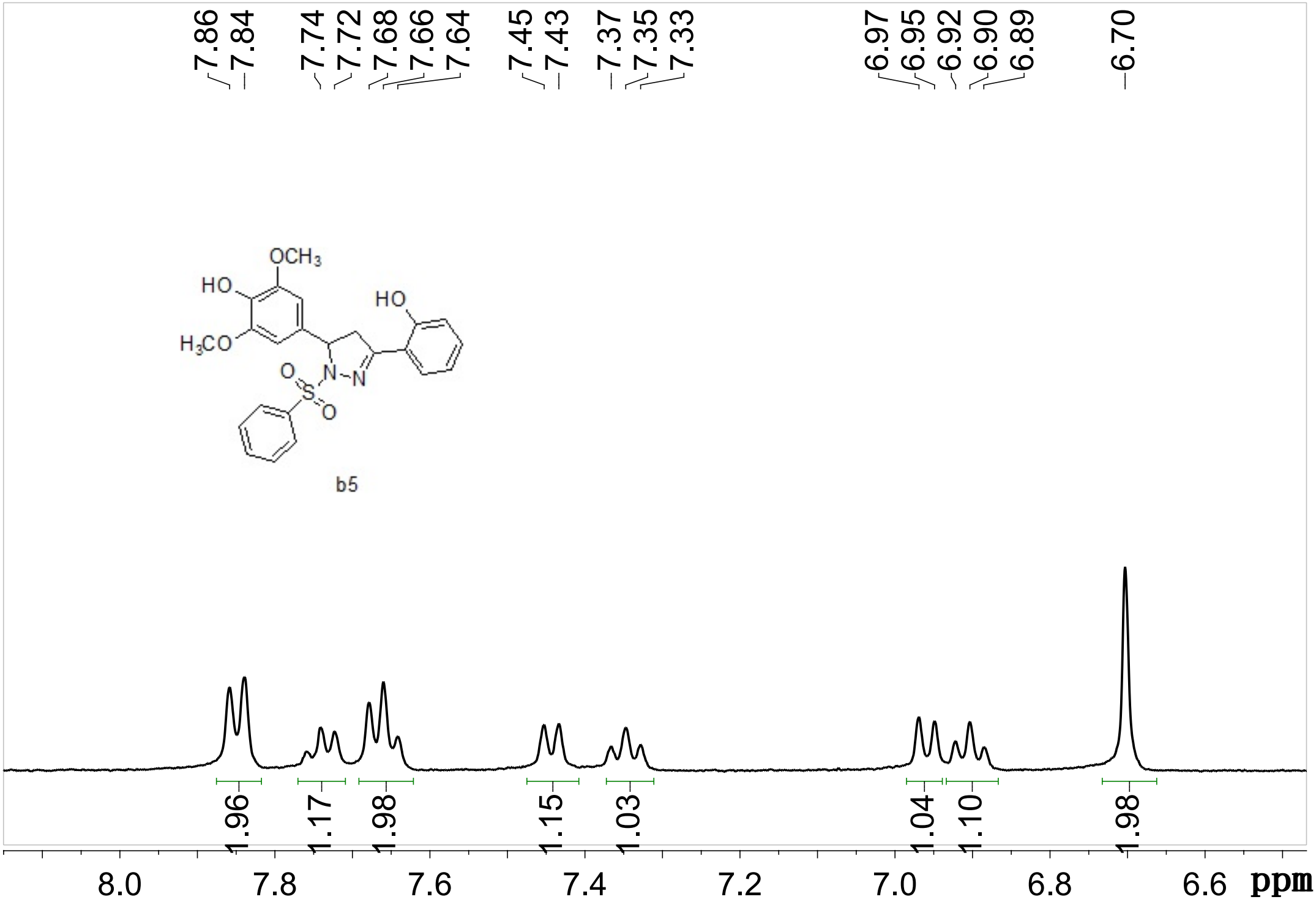
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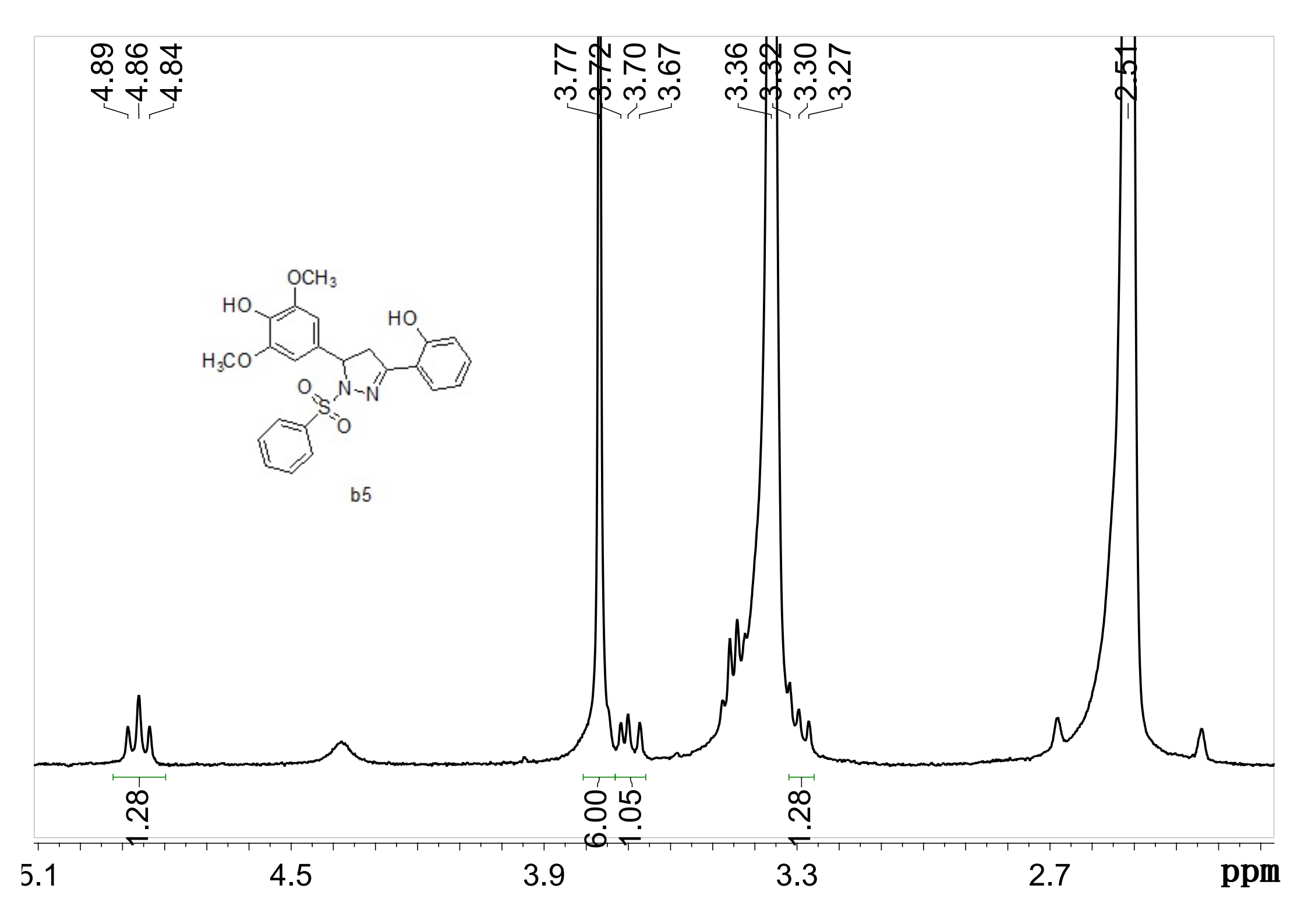
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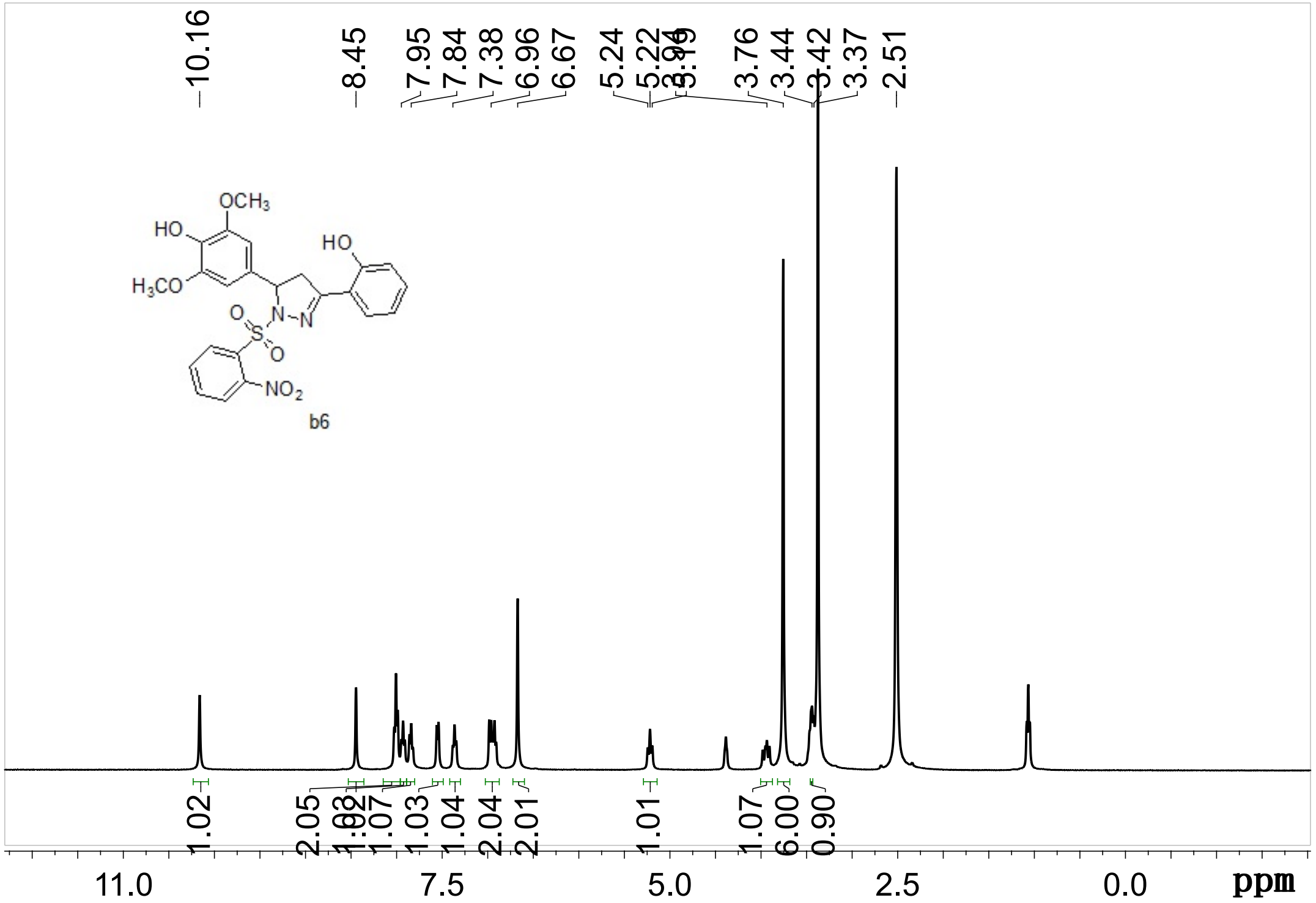
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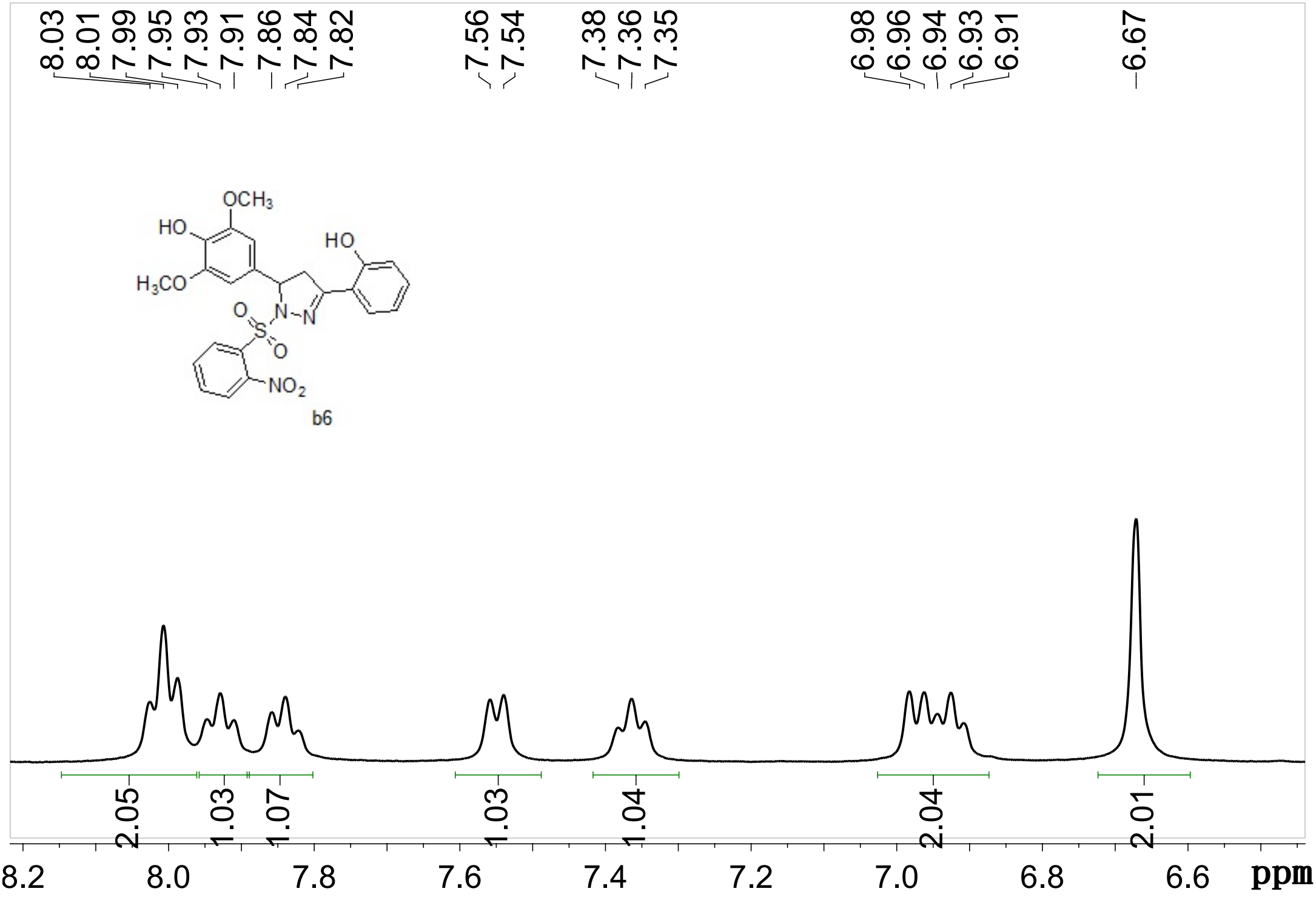
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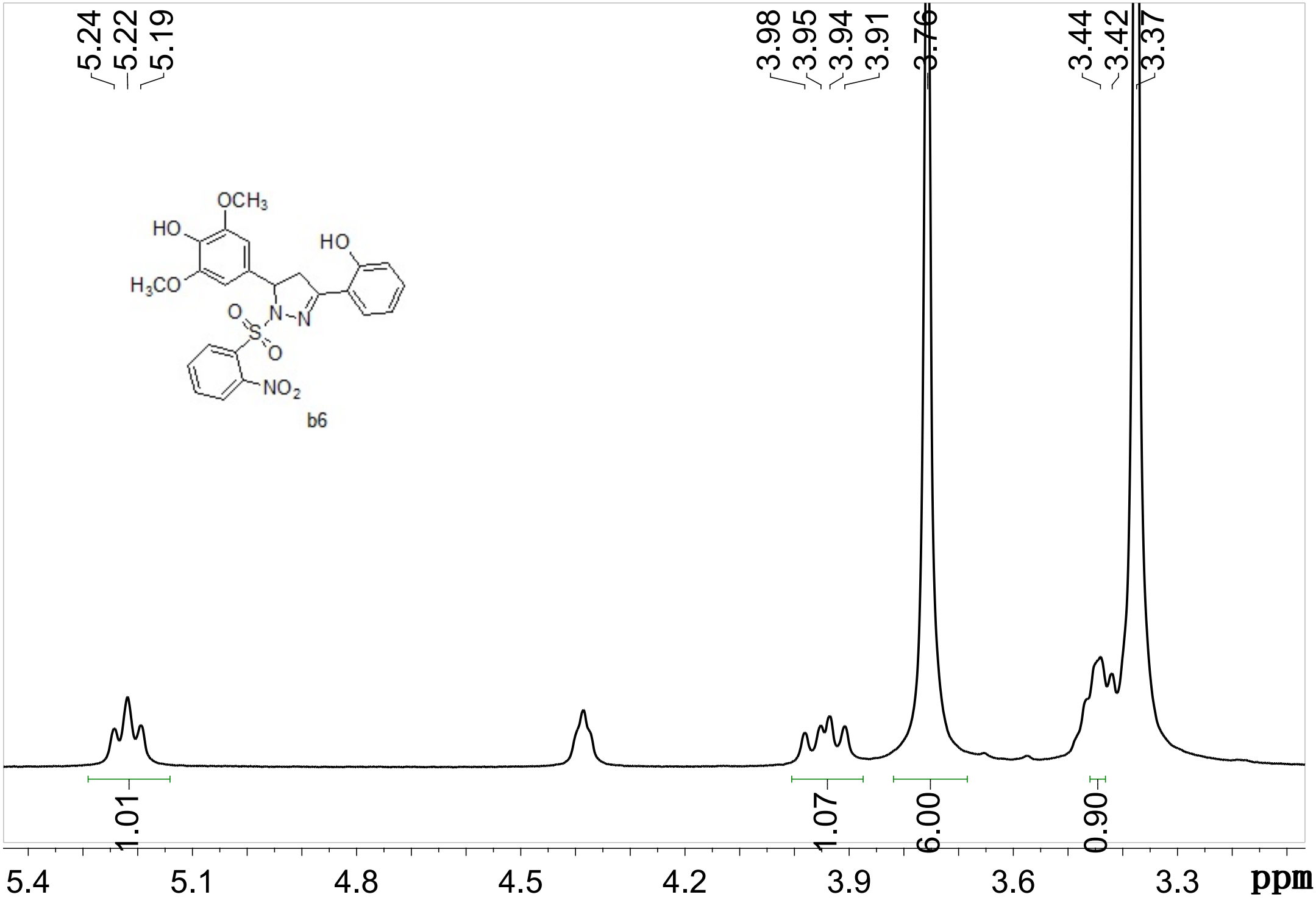
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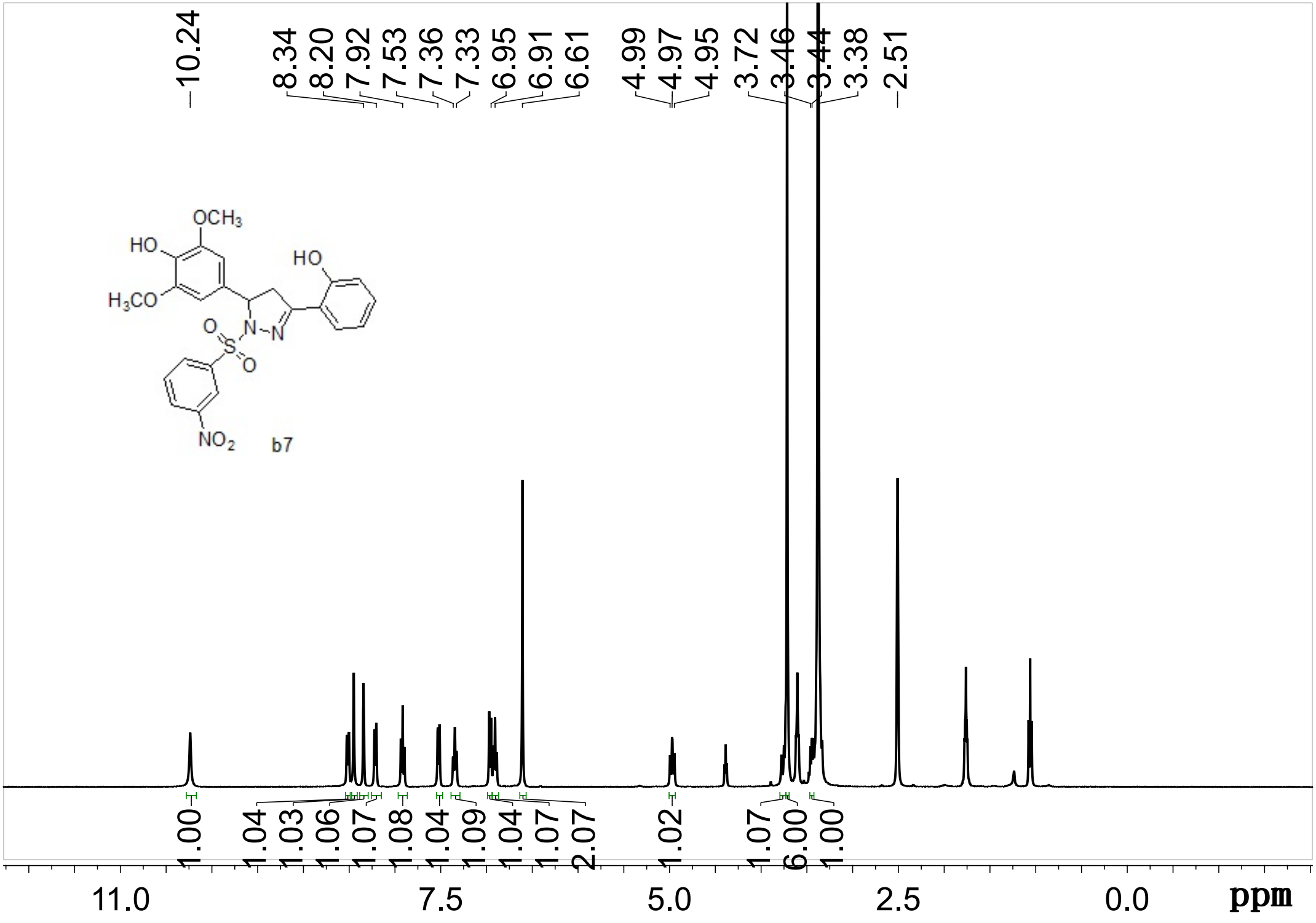
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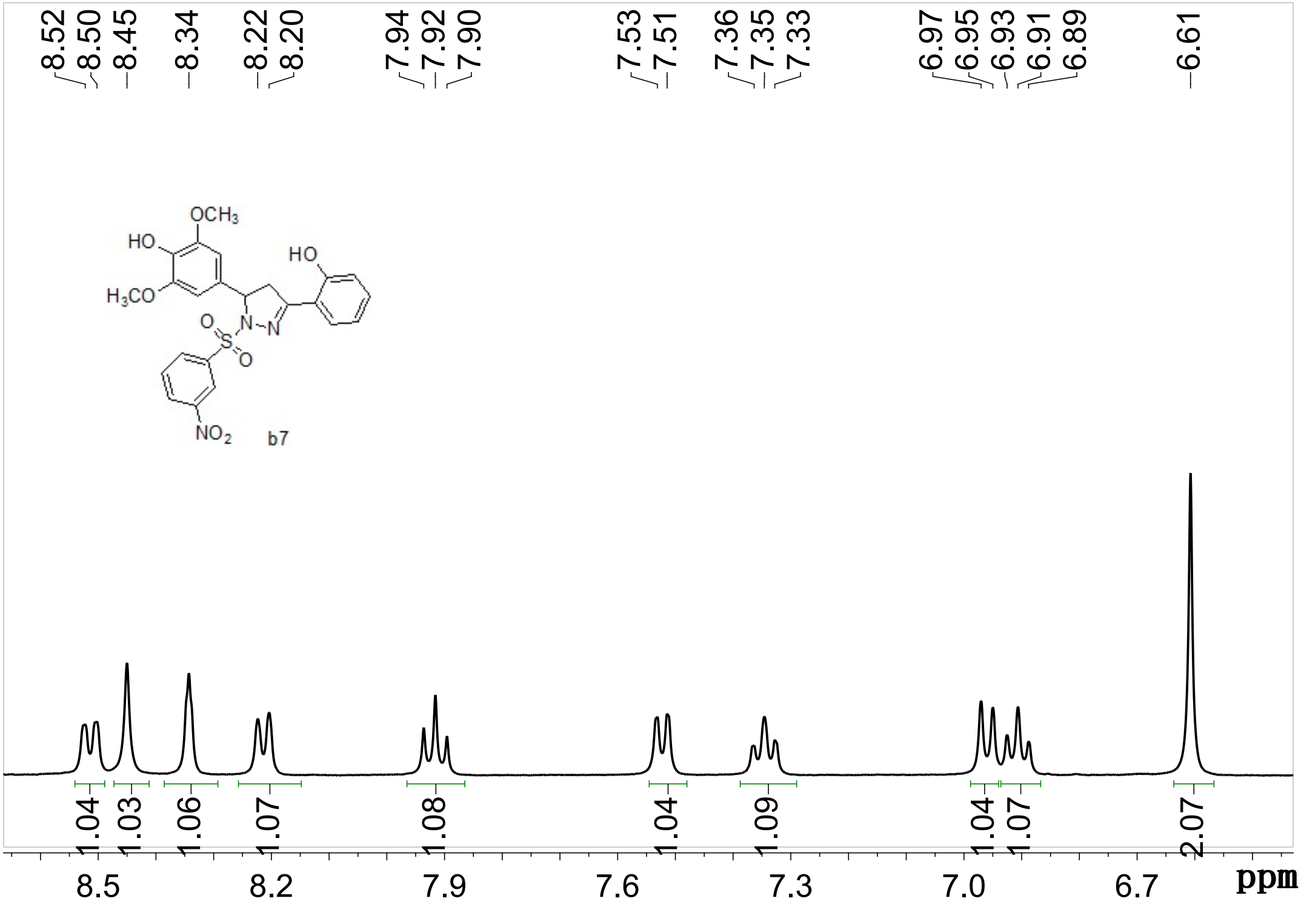
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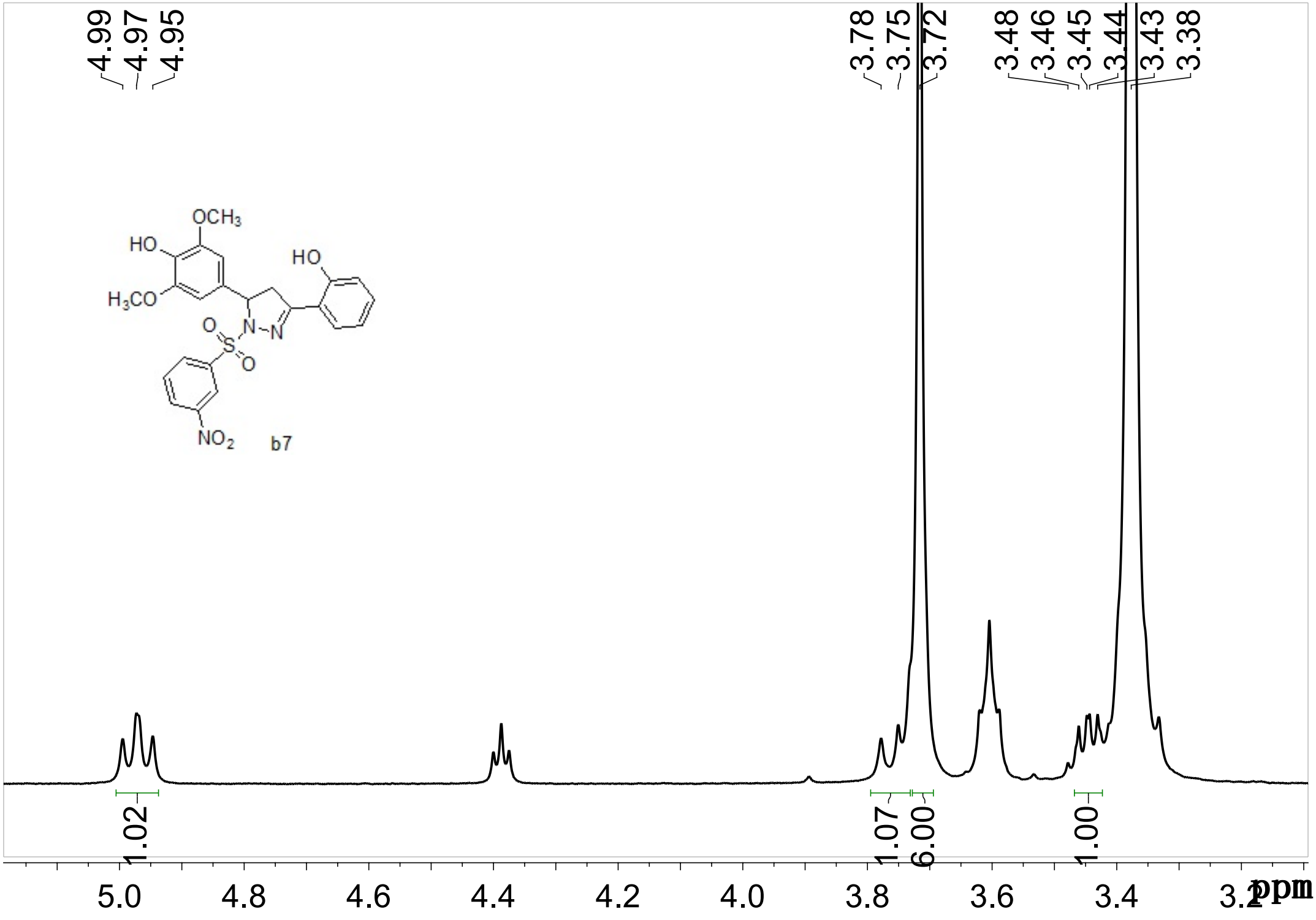
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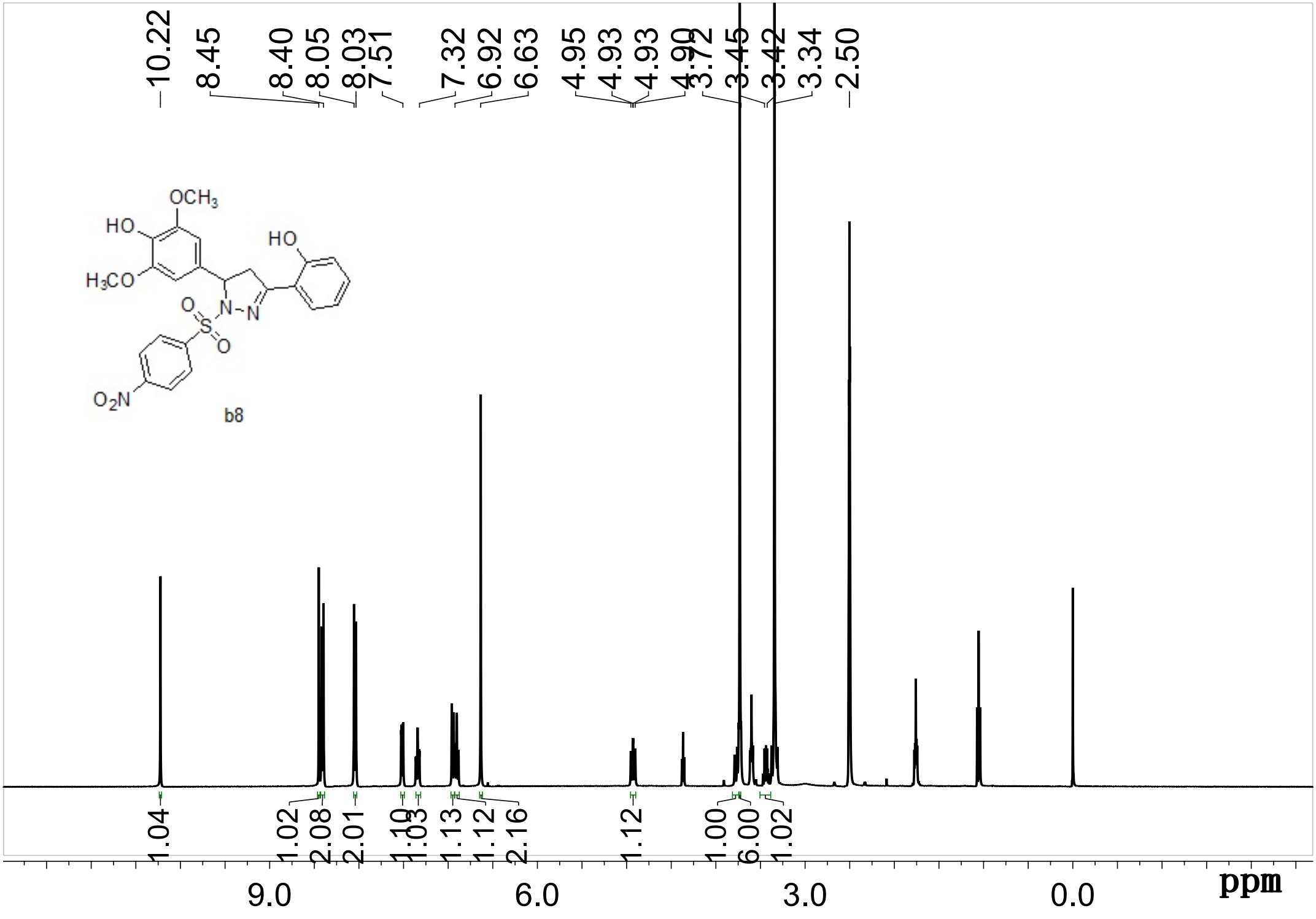
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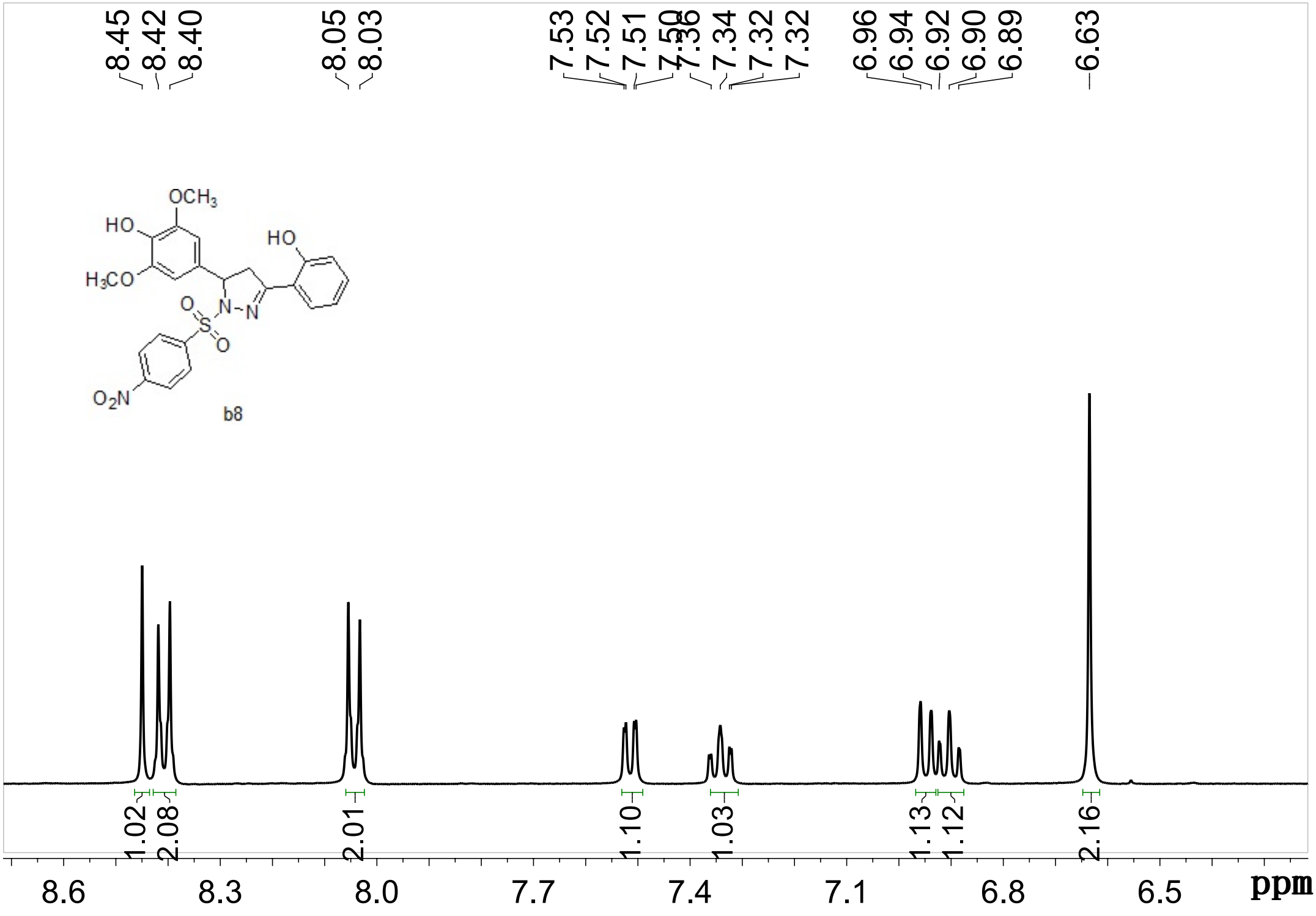
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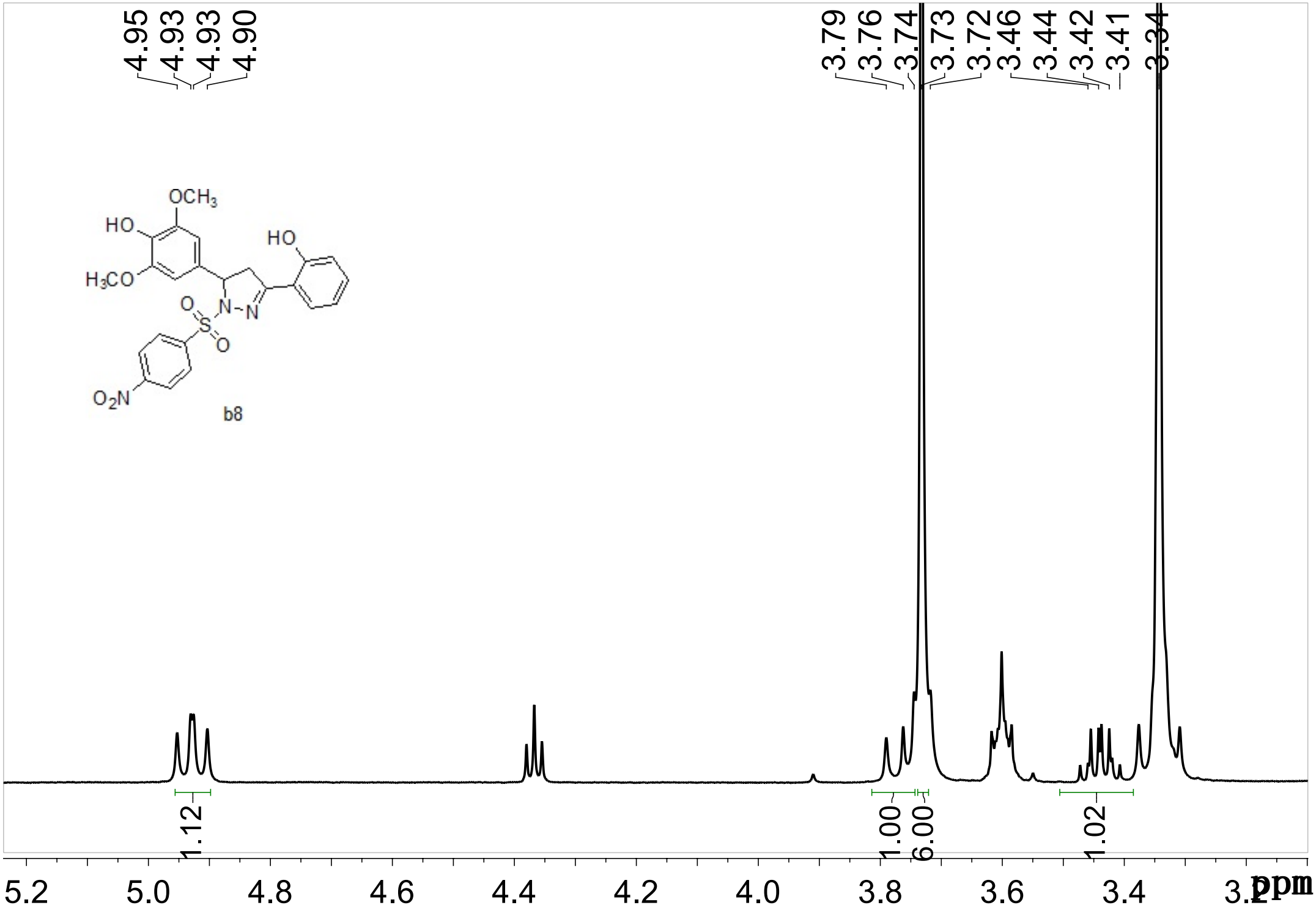
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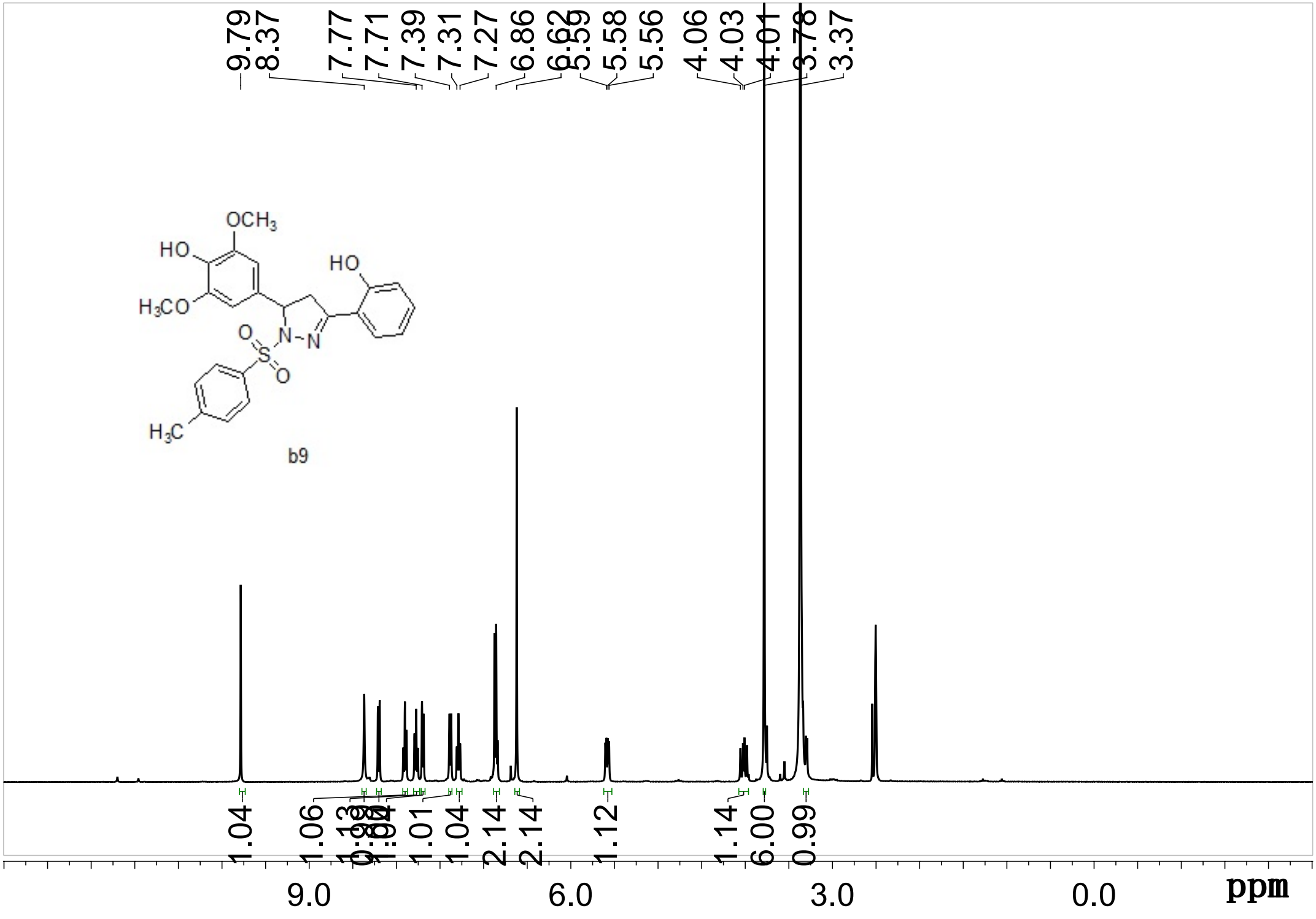
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N
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O
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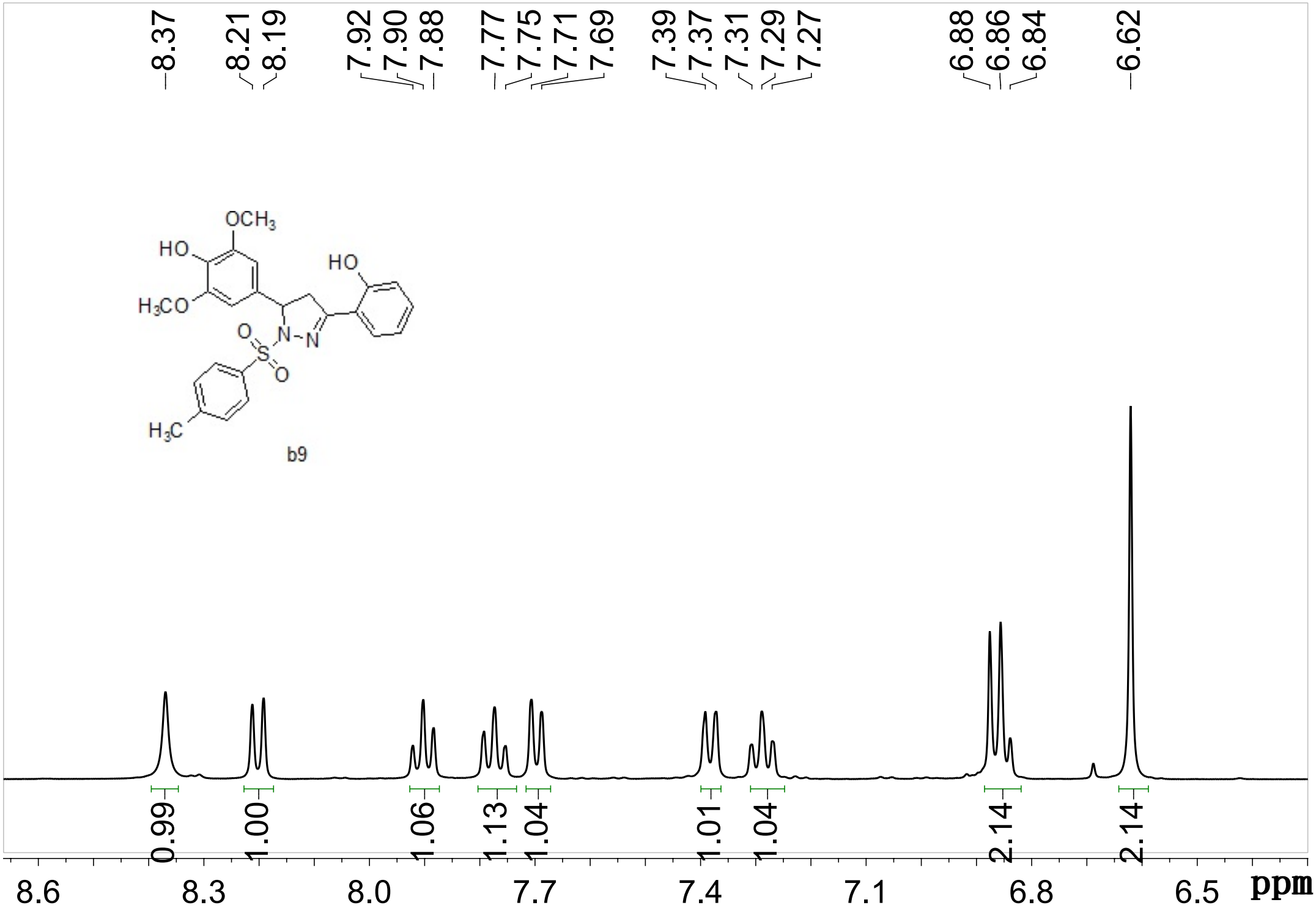
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HO
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N
N
S
O
H3C
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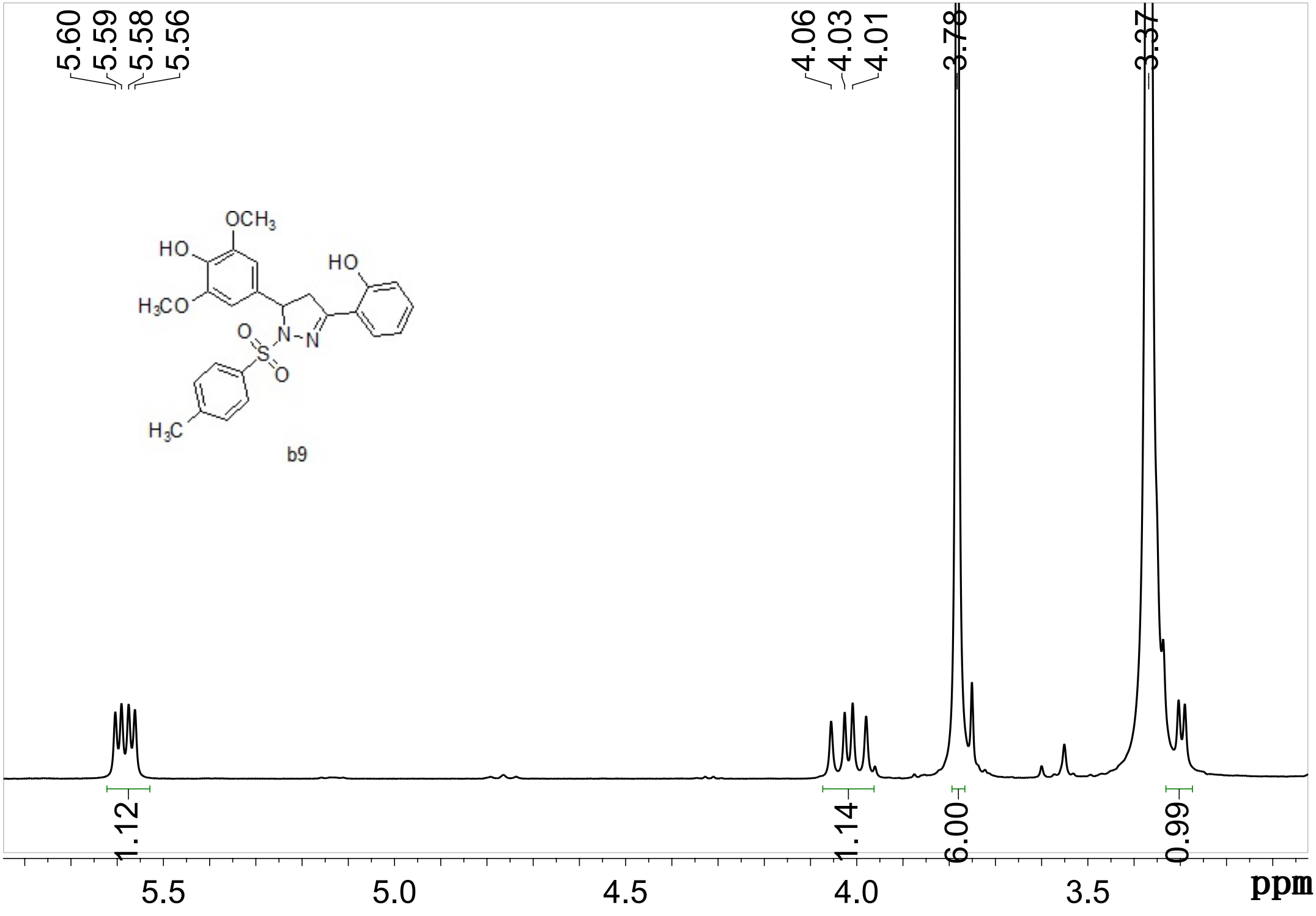
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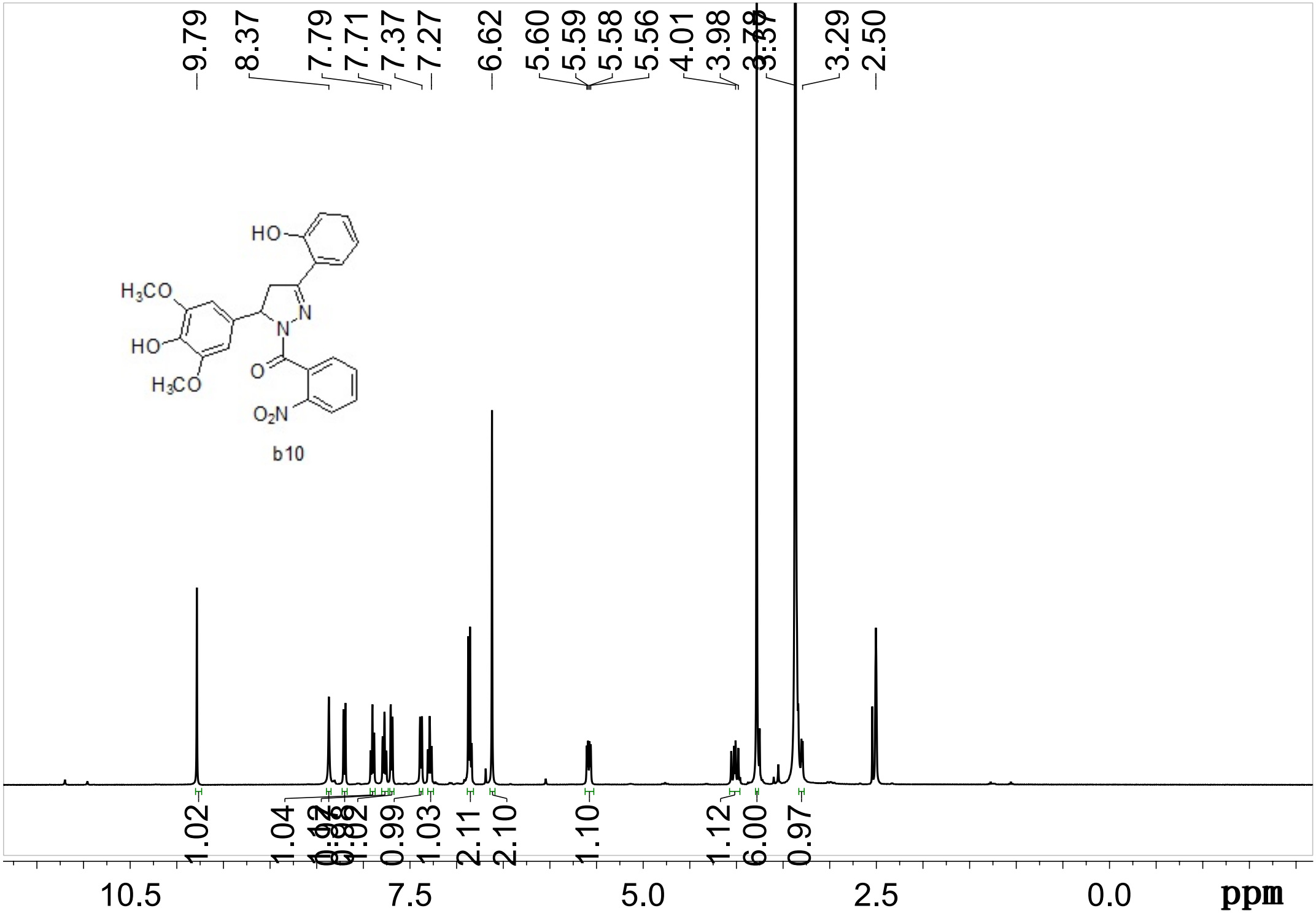
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HO
H3CO
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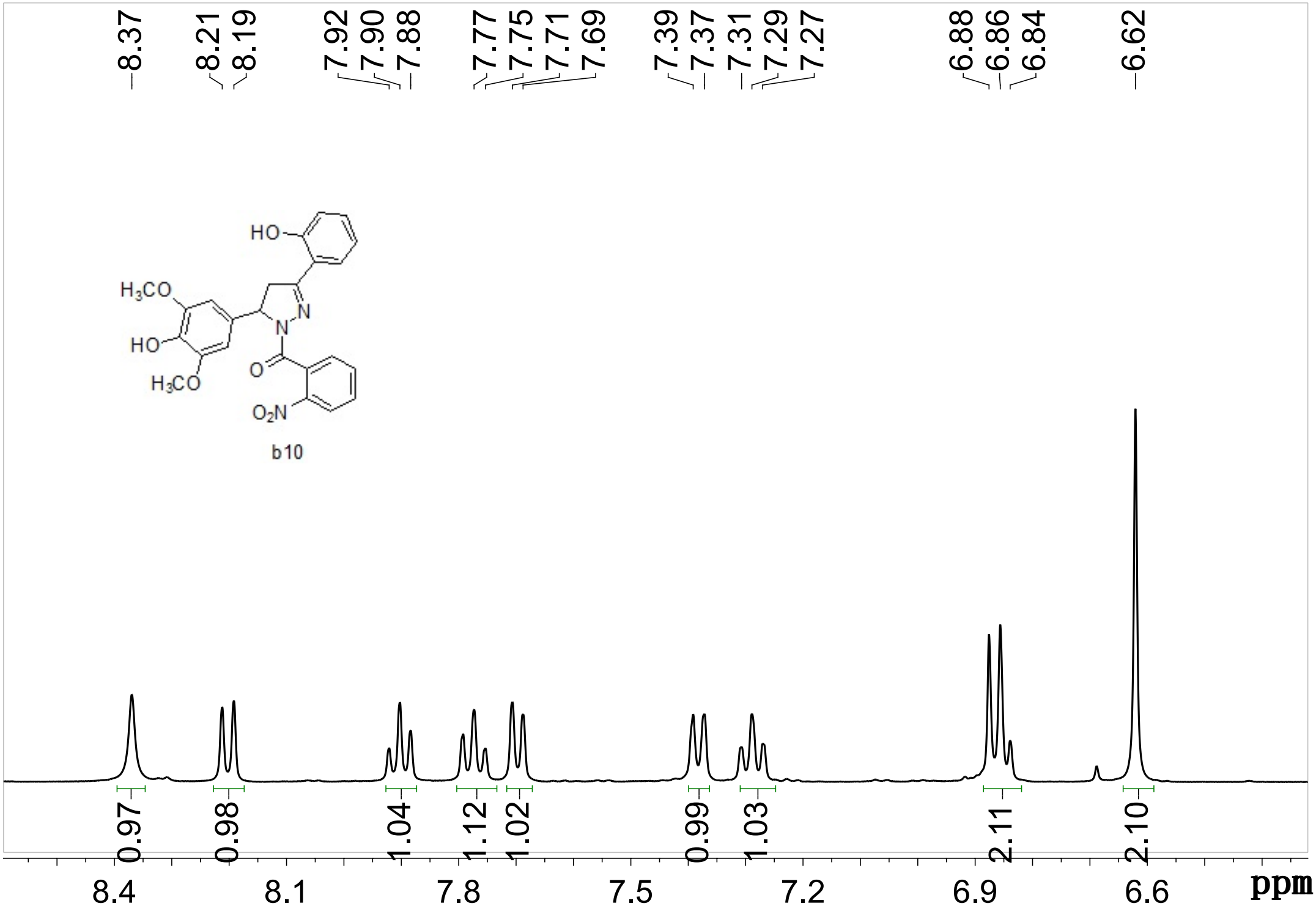
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7.29
7.27
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6.62
HO
H3CO
HO
H3CO
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N
O
O2N
b10
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0.98
1.04
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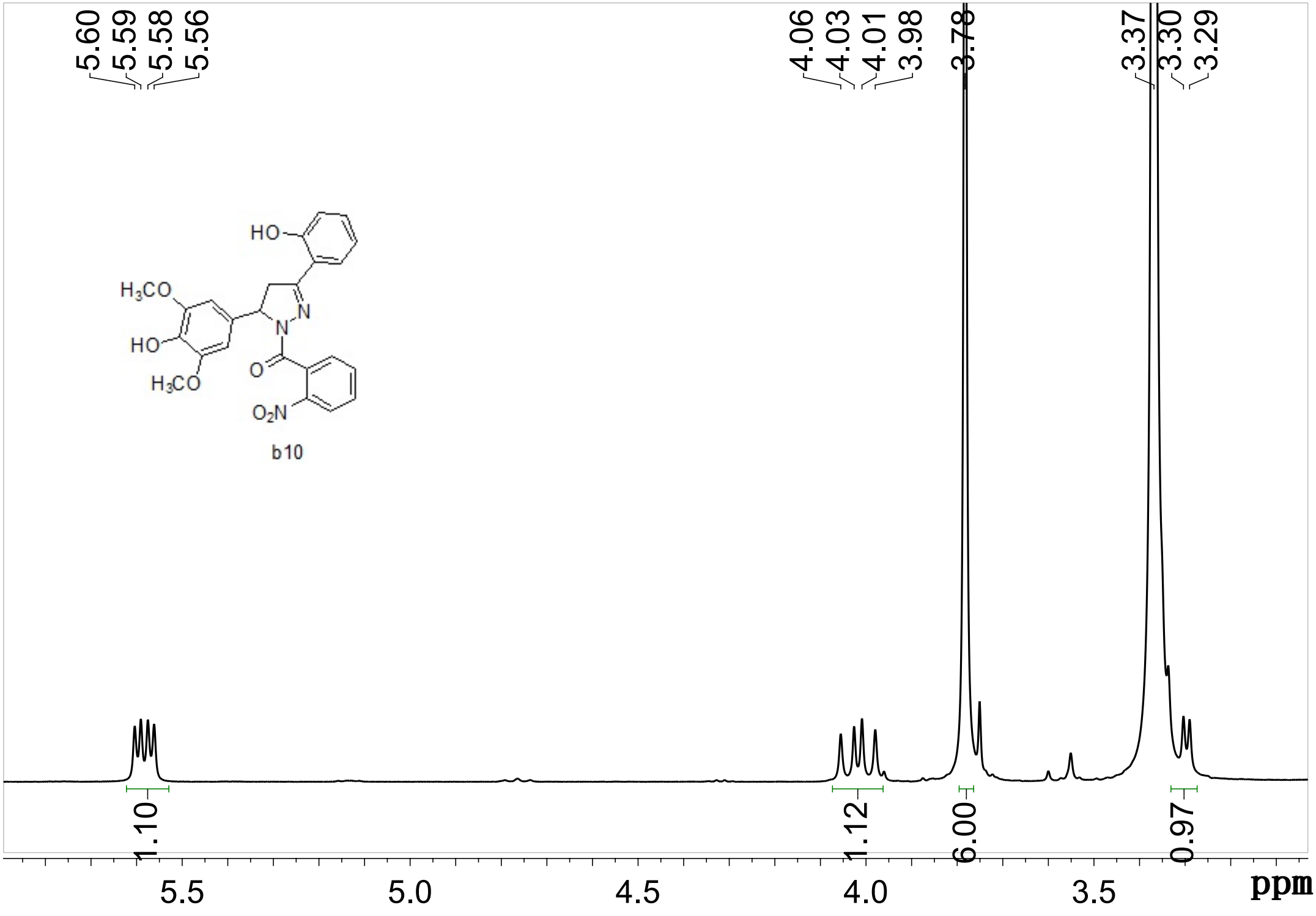
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HO
H3CO
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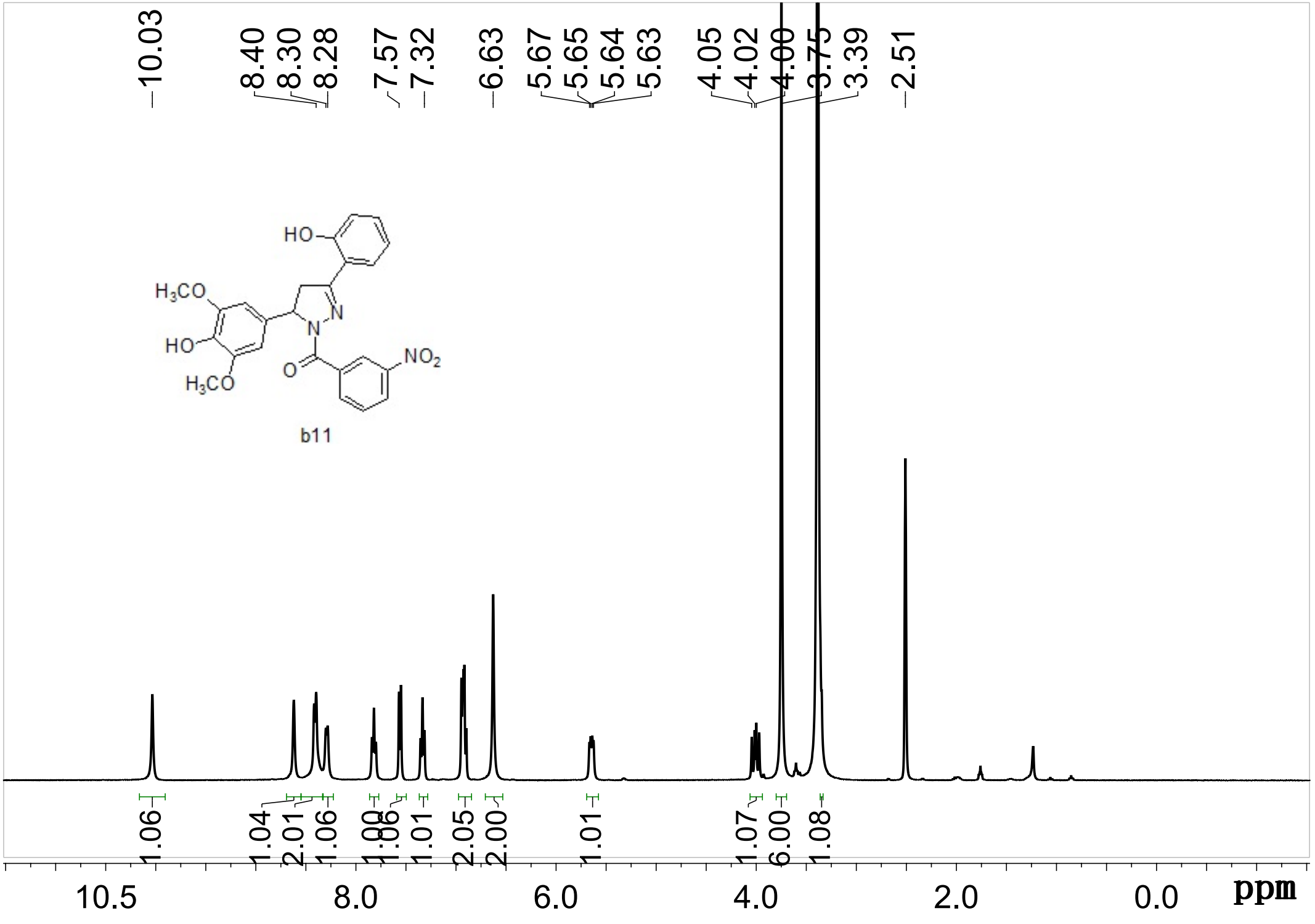
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4.02
4.00
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3.39
2.51
HO
H3CO
HO
H3CO
N
N
O
NO2
b11
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1.04
2.01
1.06
1.00
1.06
1.01
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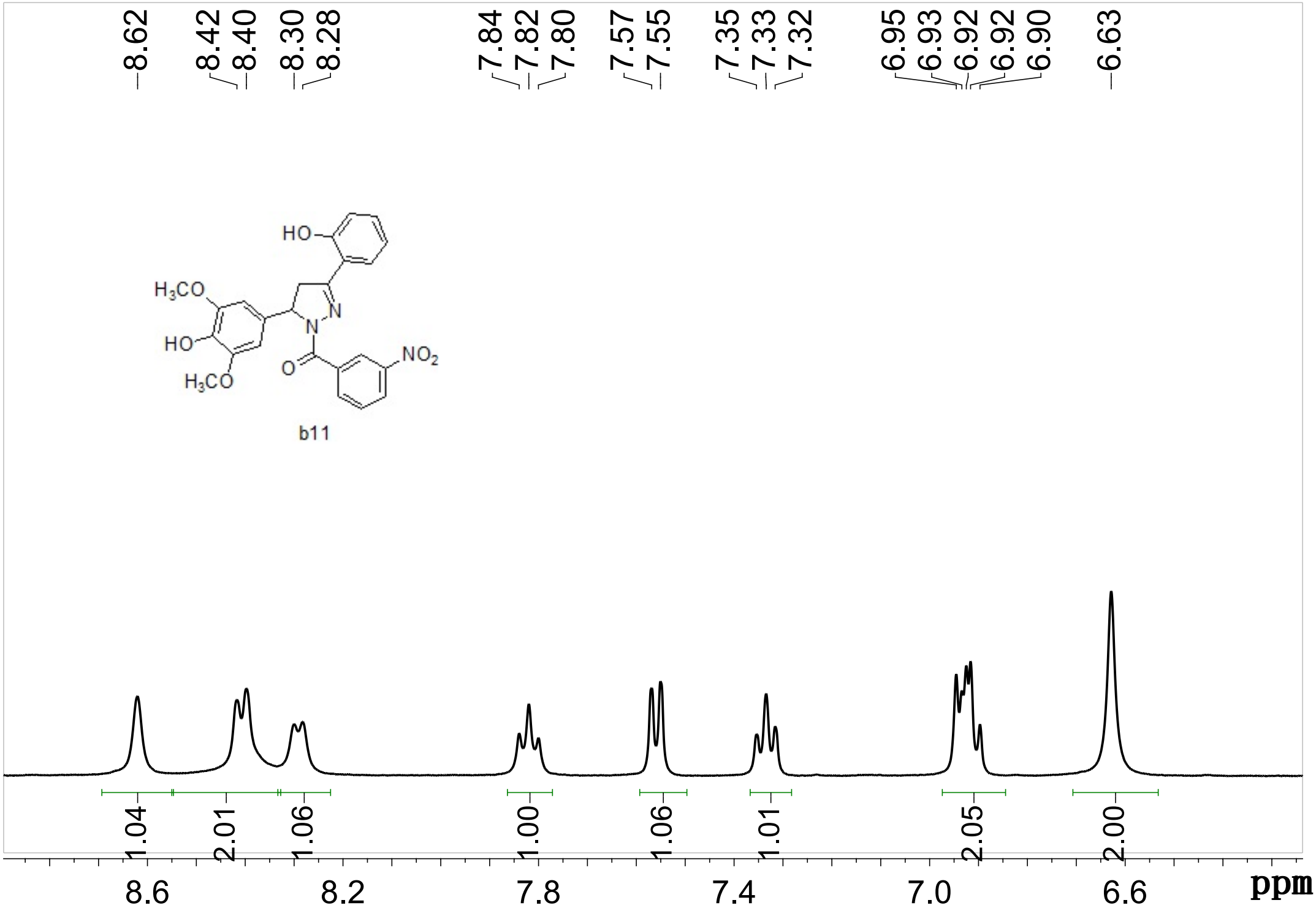
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7.32
6.95
6.93
6.92
6.92
6.90
6.63
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HO
H3CO
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N
O
NO2
b11
1.04
2.01
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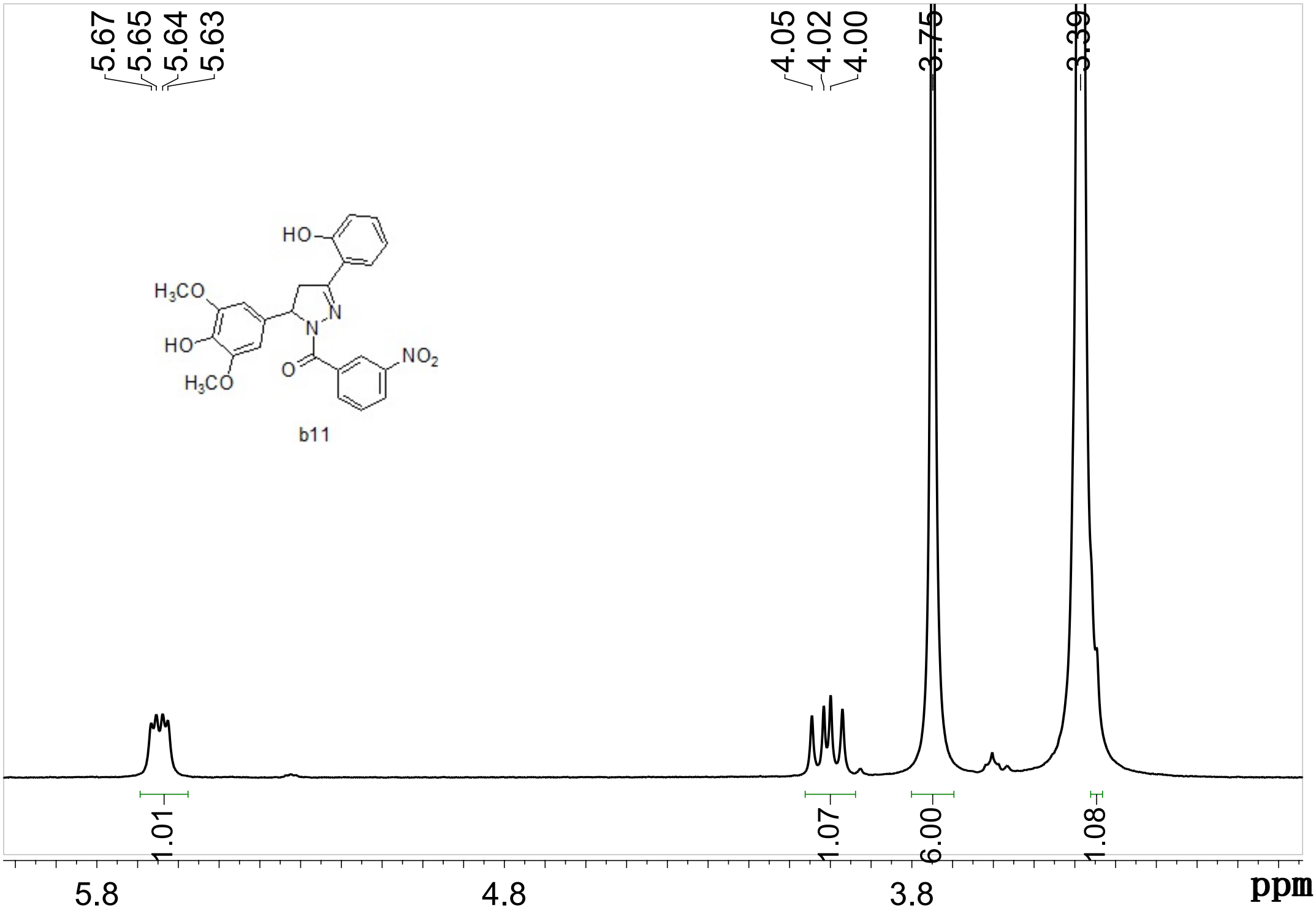
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NO2
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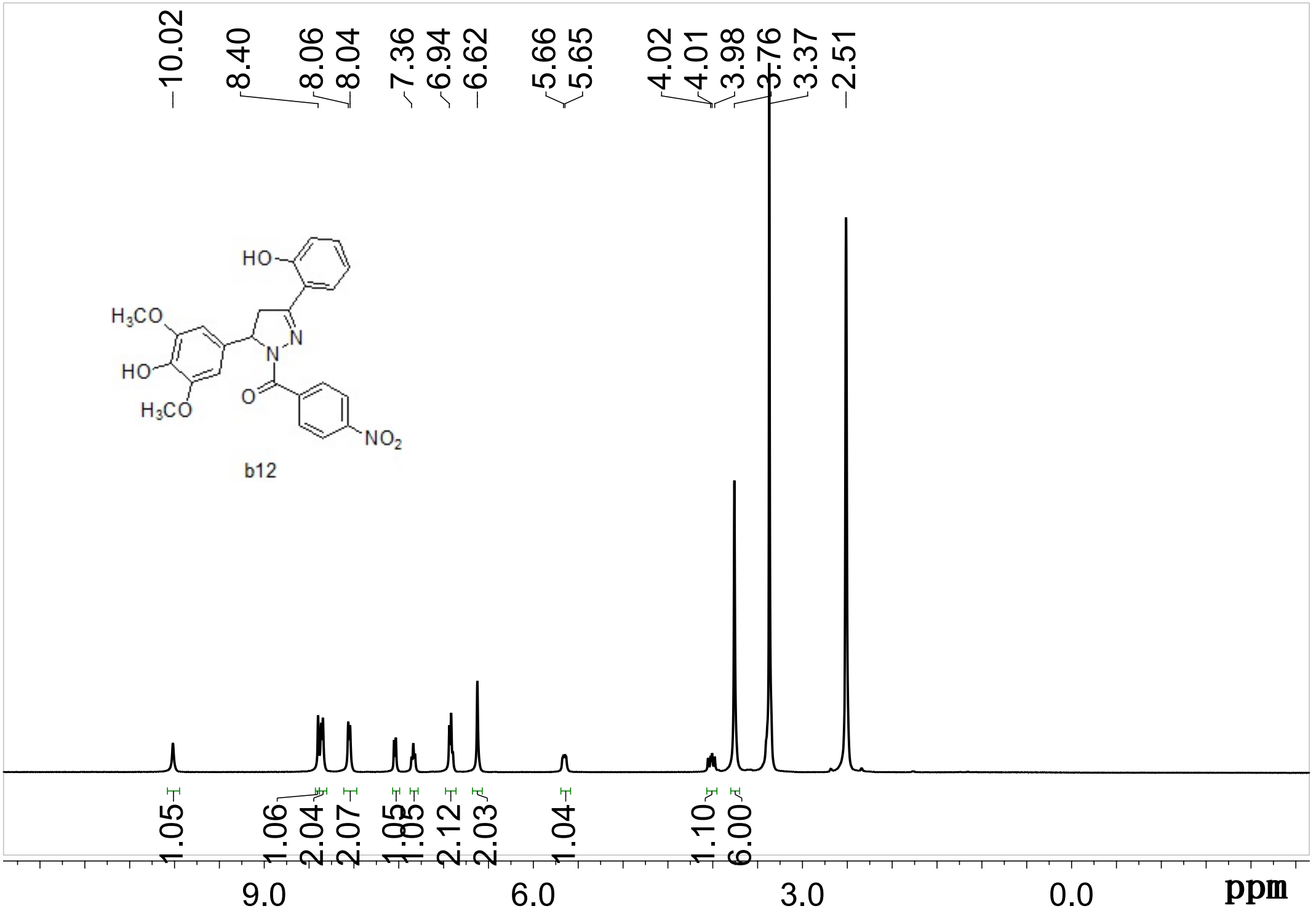
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4.01
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2.51
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HO
H3CO
N
N
O
NO2
b12
1.05
1.06
2.04
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2.12
2.03
1.04
1.10
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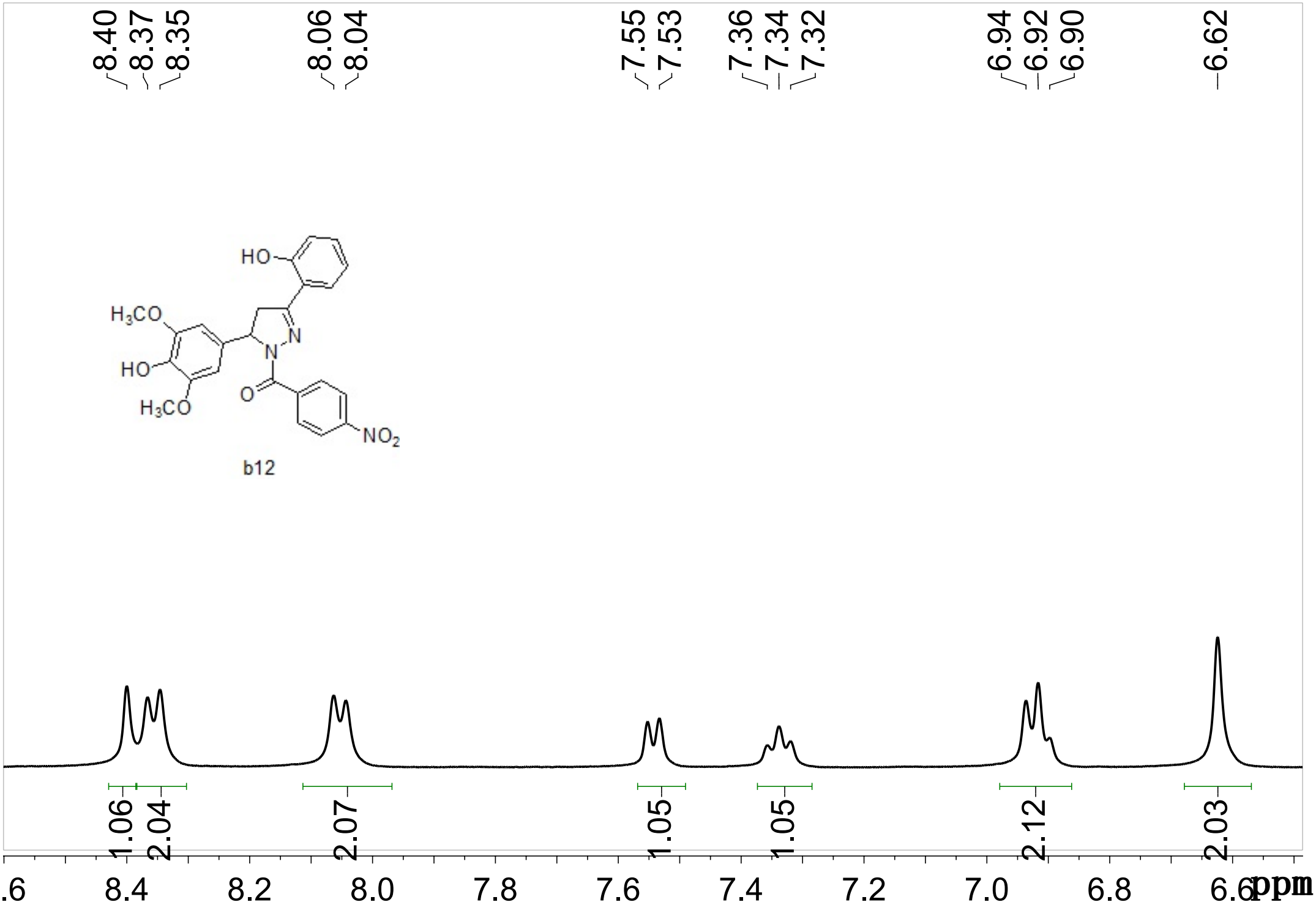
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6.62
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H3CO
HO
H3CO
N
N
O
NO2
b12
1.06
2.04
2.07
1.05
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8.2
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7.4
7.2
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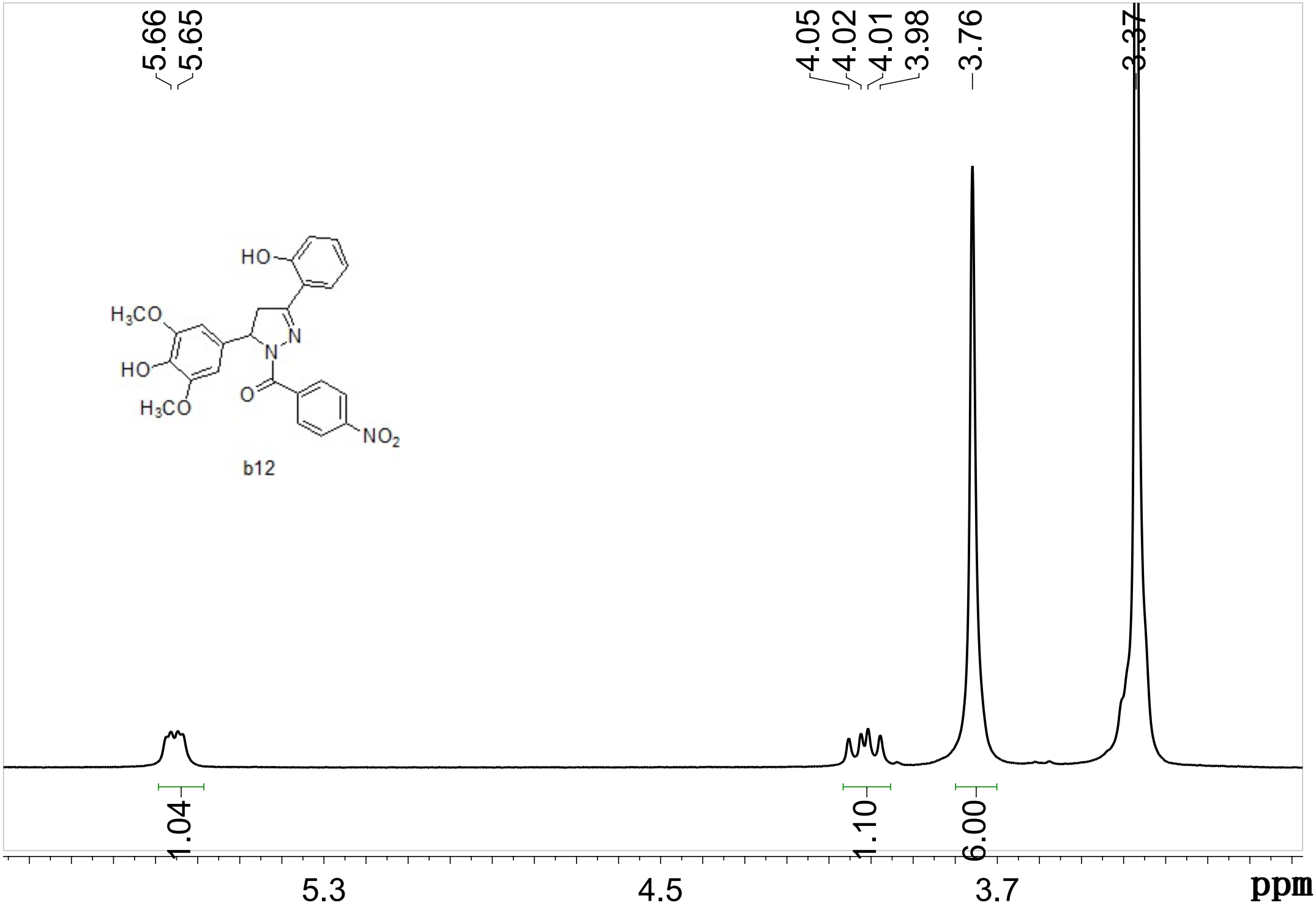
6.8
ppm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O
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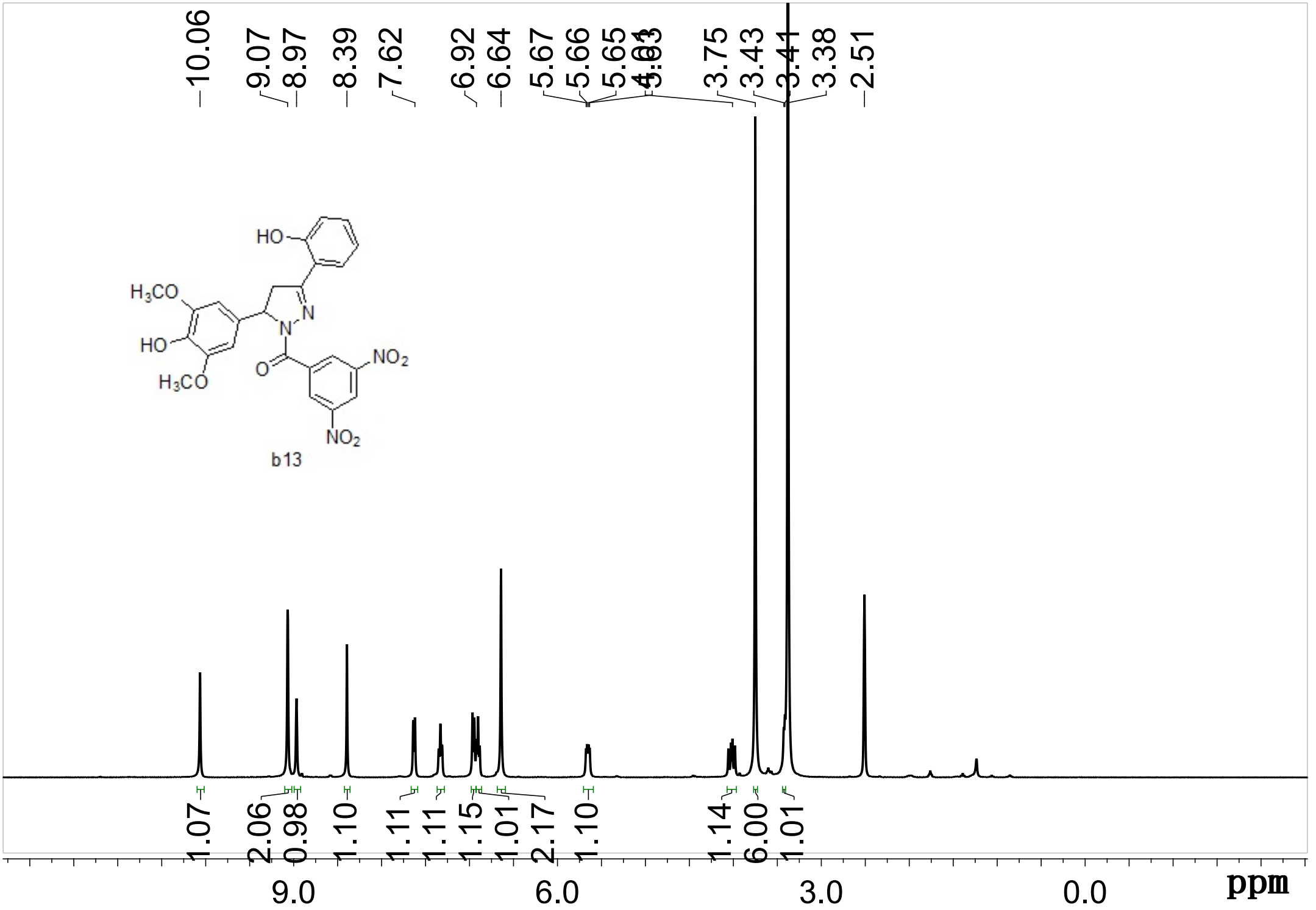
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3.41
3.38
2.51
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H3CO
HO
H3CO
N
N
O
NO2
NO2
b13
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2.06
0.98
1.10
1.11
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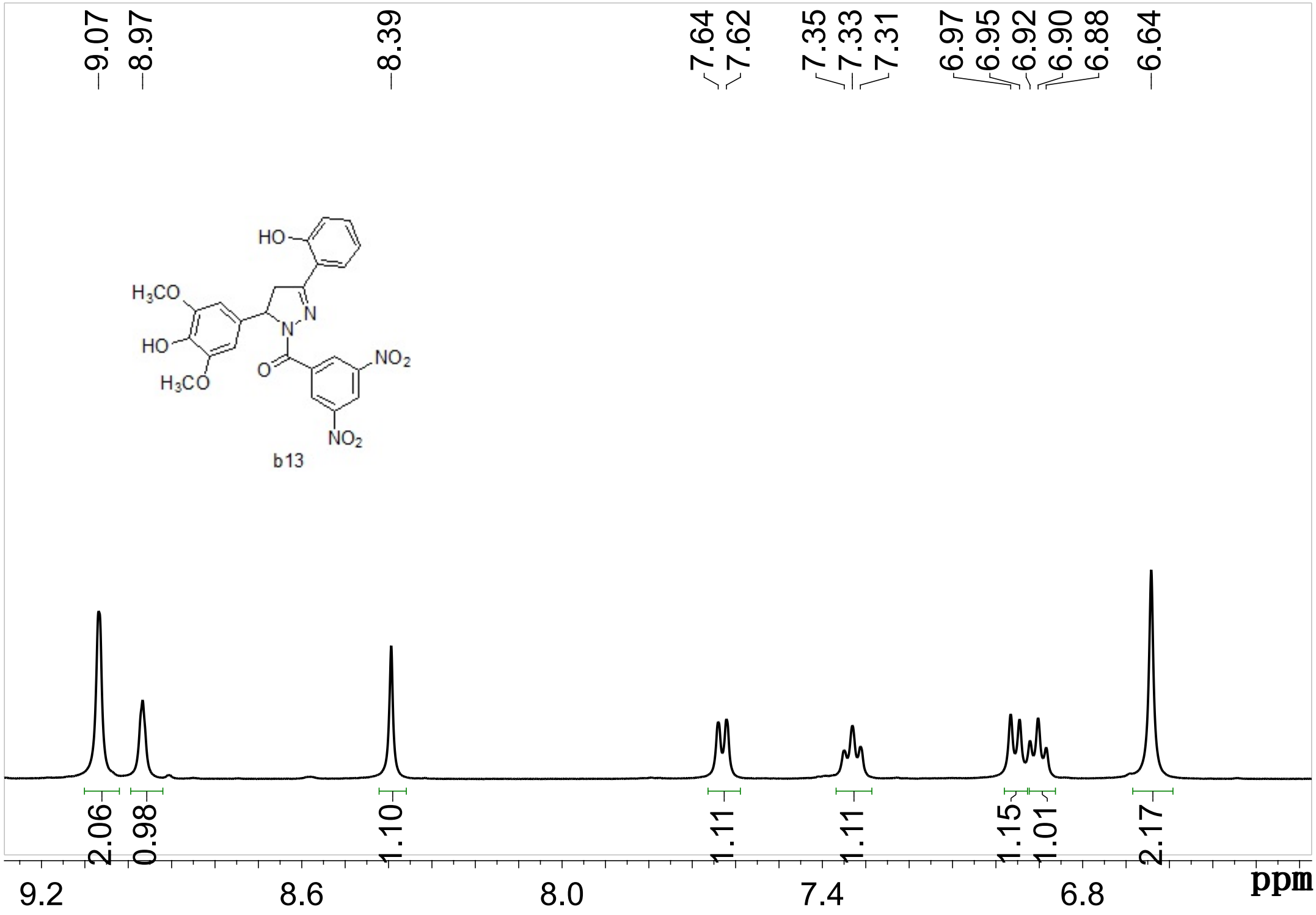
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6.64
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HO
H3CO
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N
O
NO2
NO2
b13
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1.11
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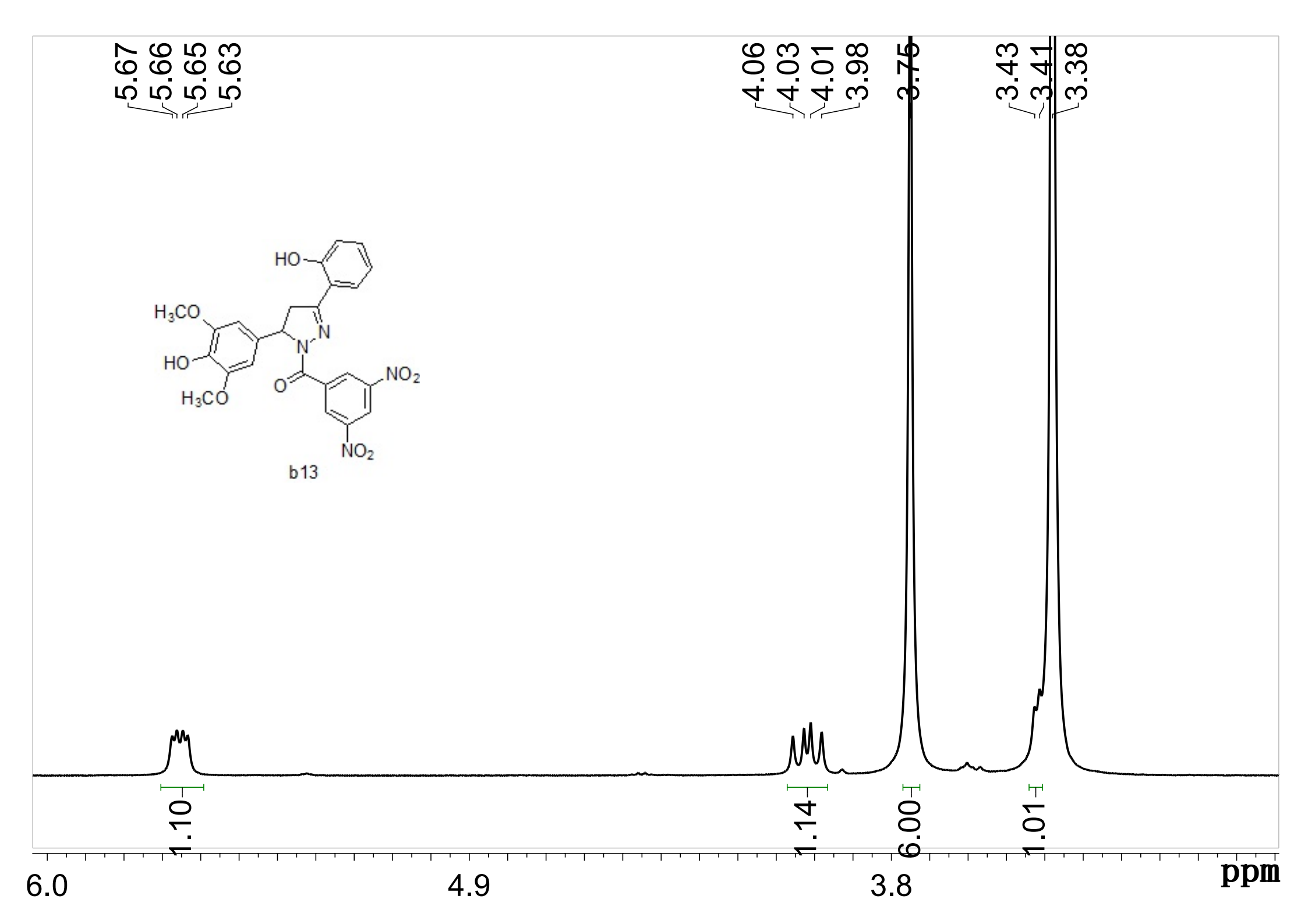
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HO
H3CO
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NO2
b13
1.10
1.14
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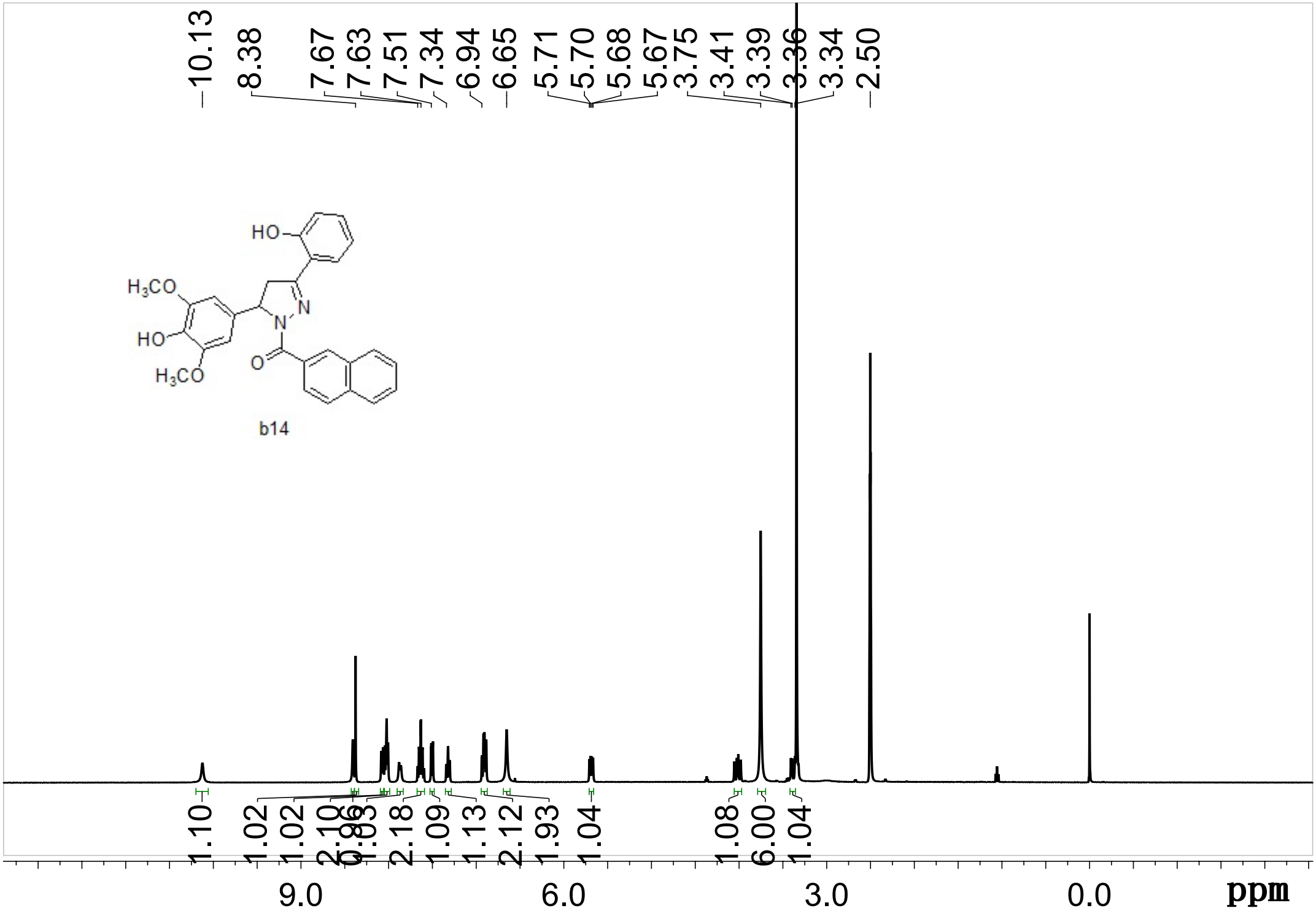
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3.39
3.36
3.34
2.50
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HO
H3CO
N
N
O
b14
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1.02
1.02
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2.18
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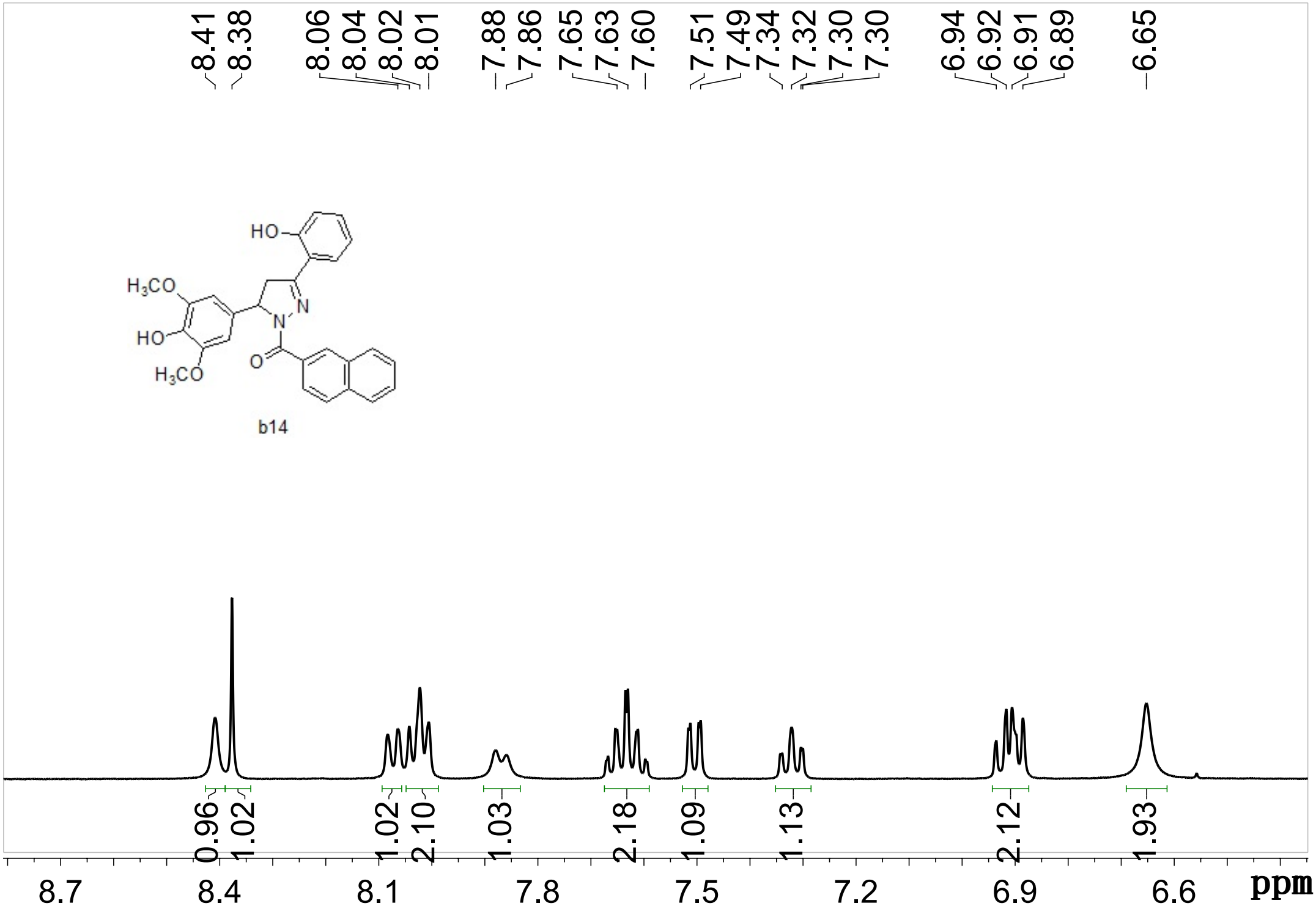
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7.30
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6.92
6.91
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HO
H3CO
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N
O
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1.02
2.10
1.03
2.18
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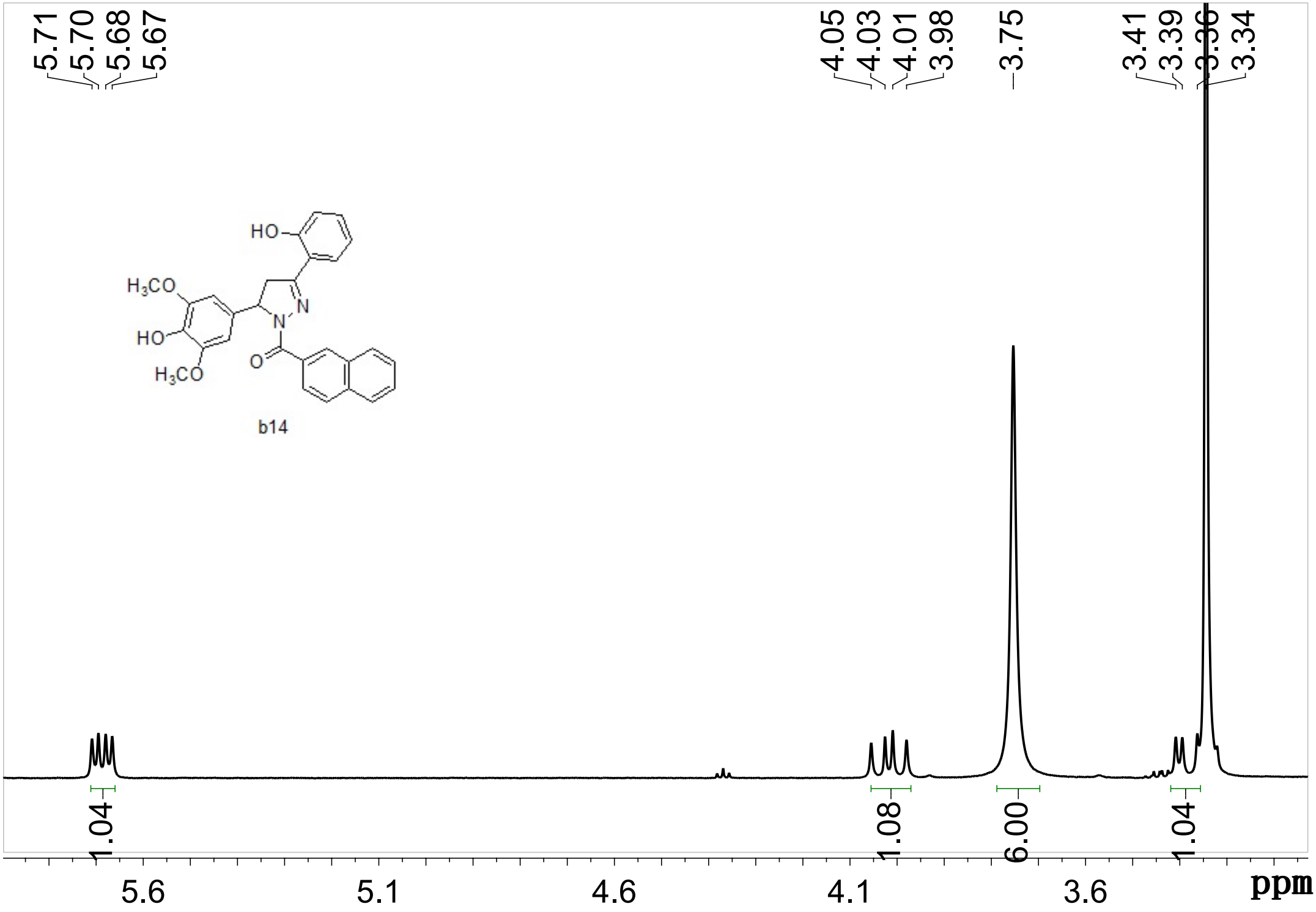
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3.36
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HO
H3CO
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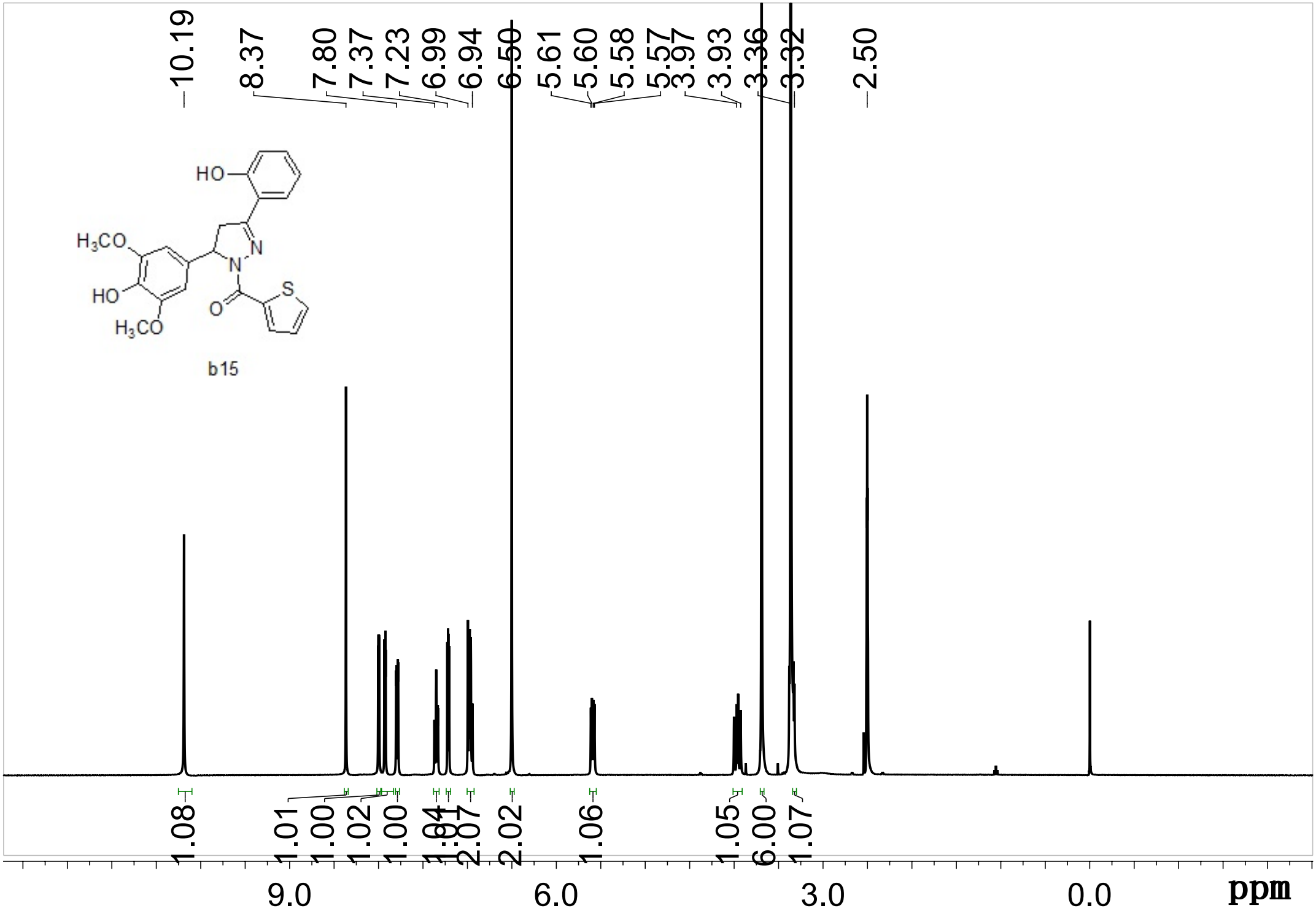
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HO
H3CO
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N
O
S
b15
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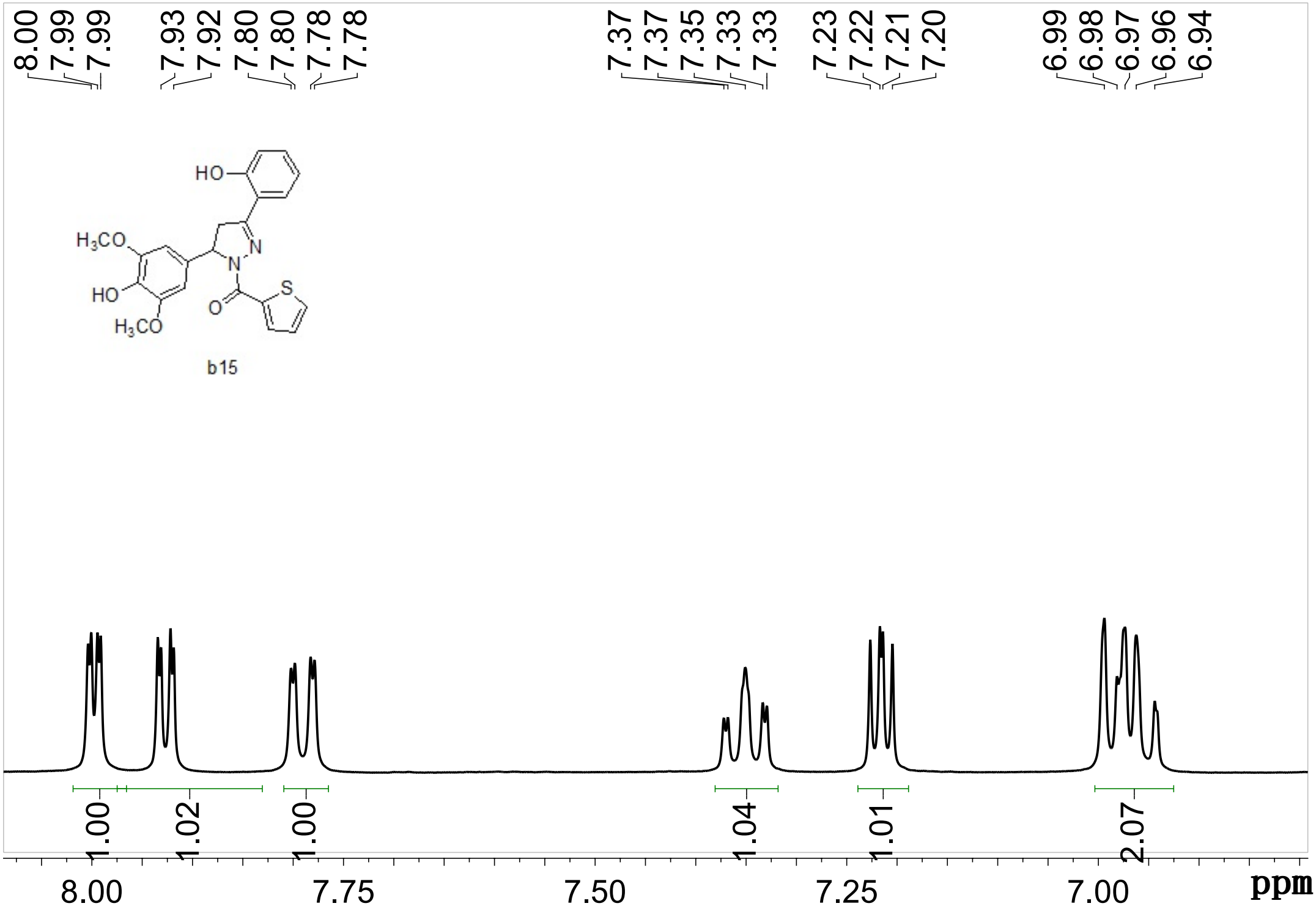
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7.33
7.23
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6.99
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HO
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HO
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N
N
O
S
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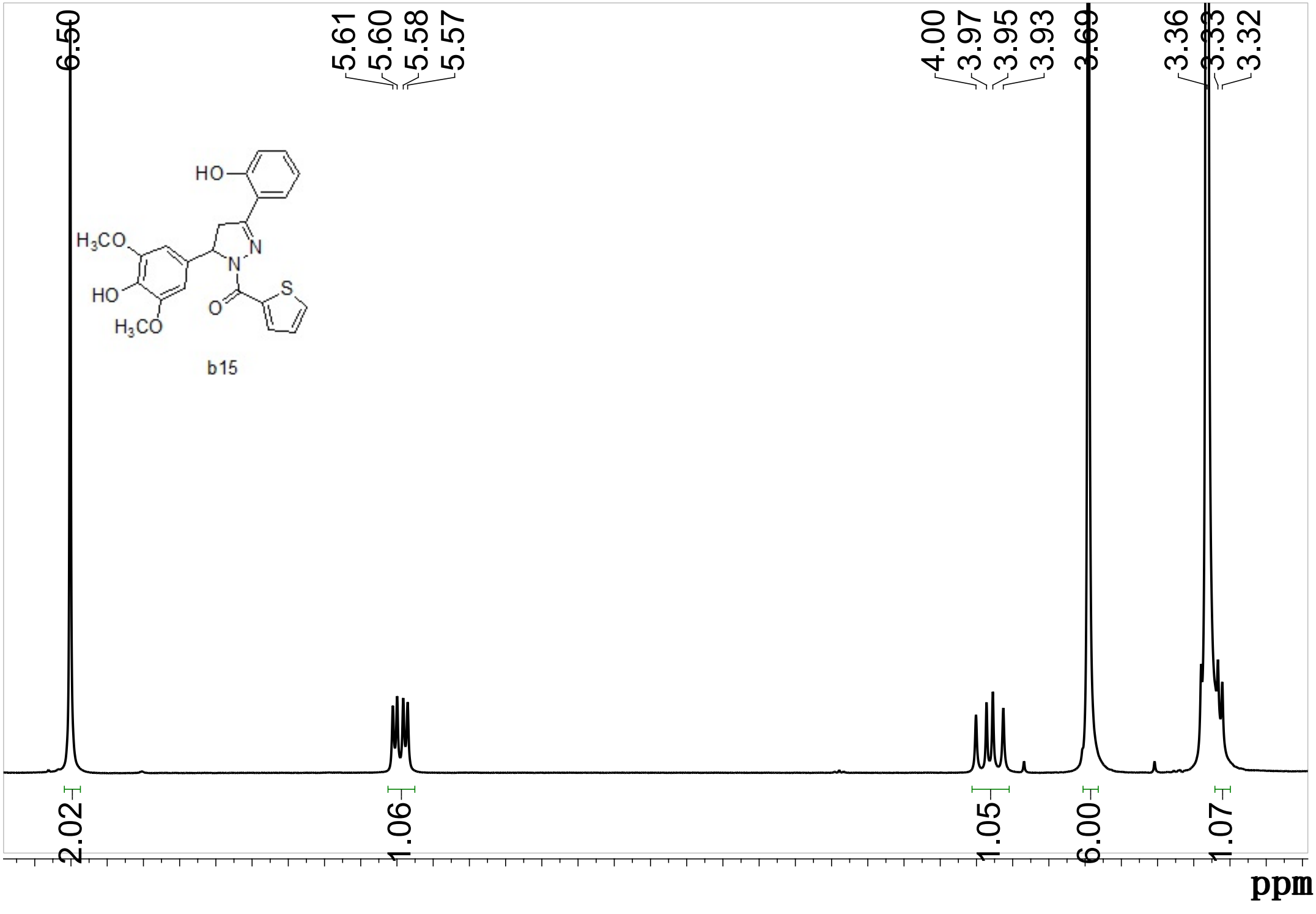
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3.32
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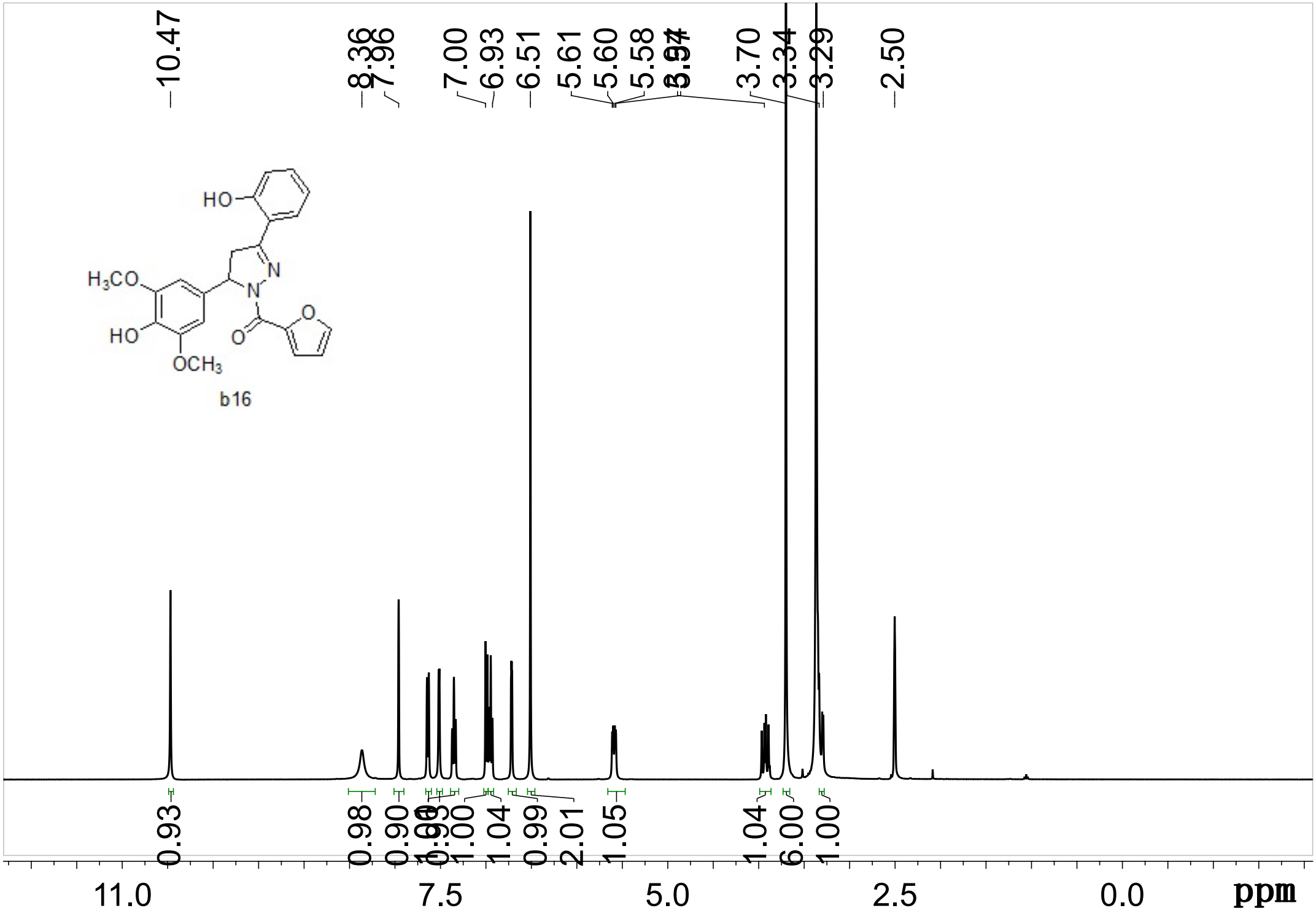
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H3CO
HO
OCH3
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N
O
O
b16
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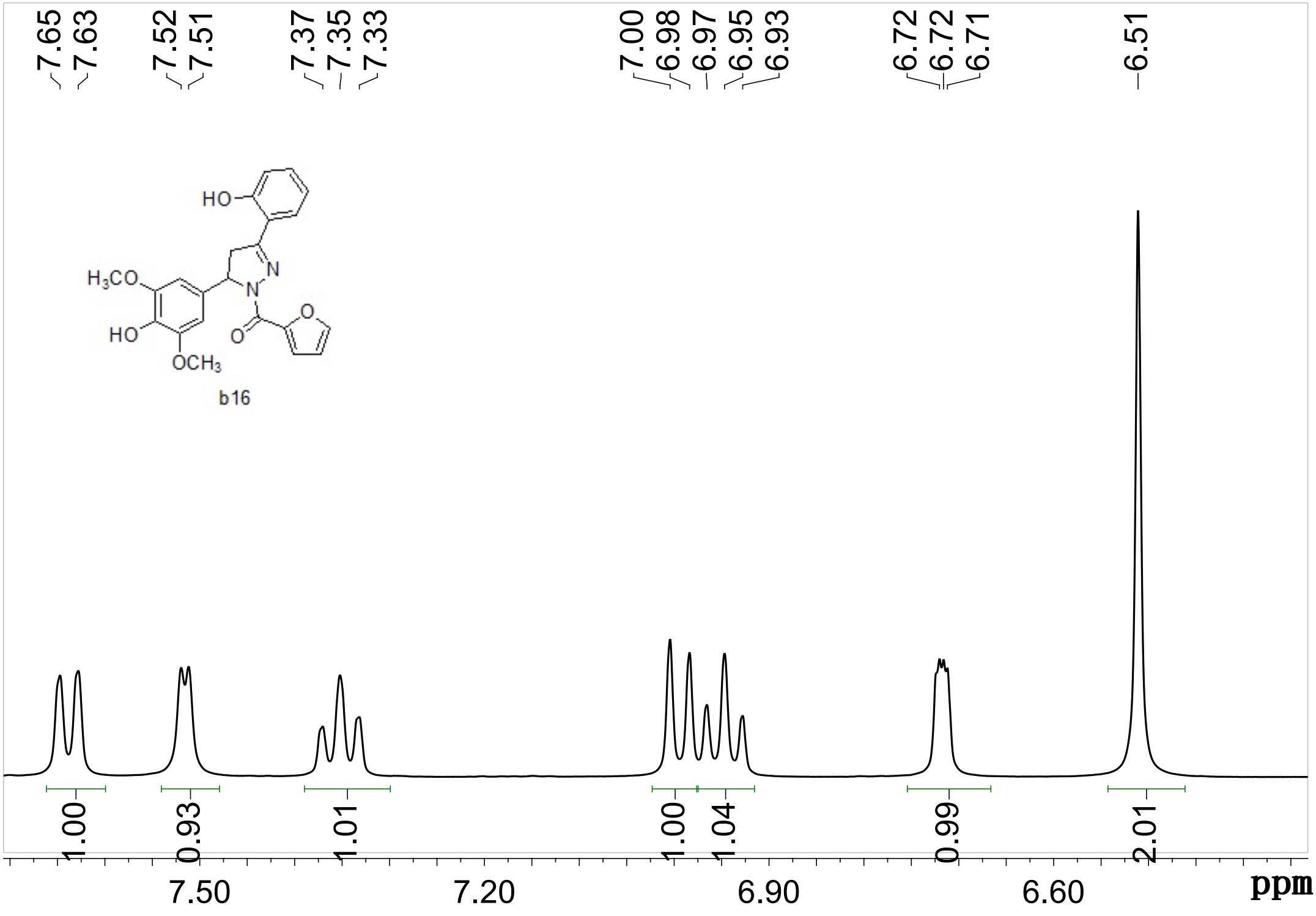
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O
O
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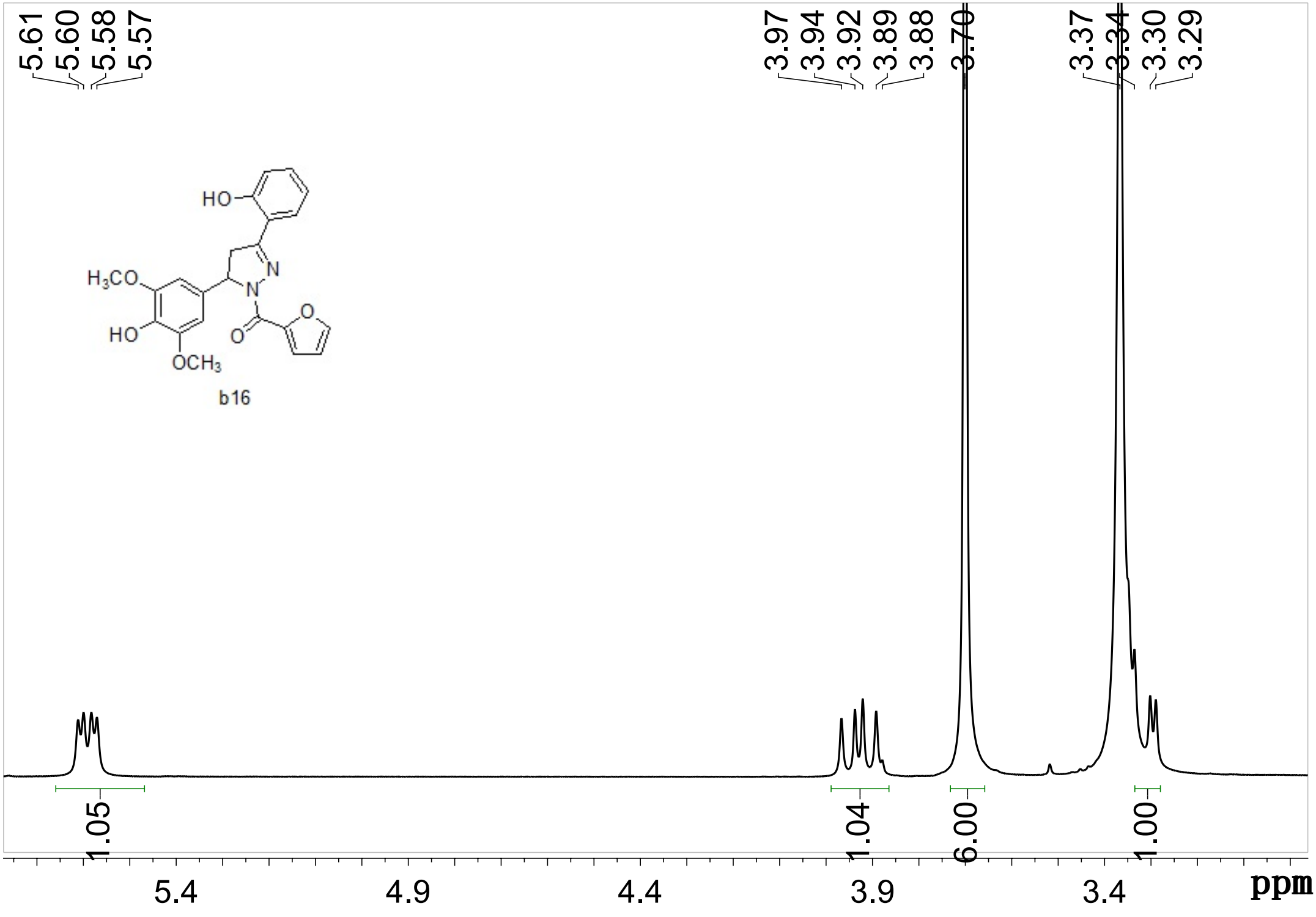
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HO
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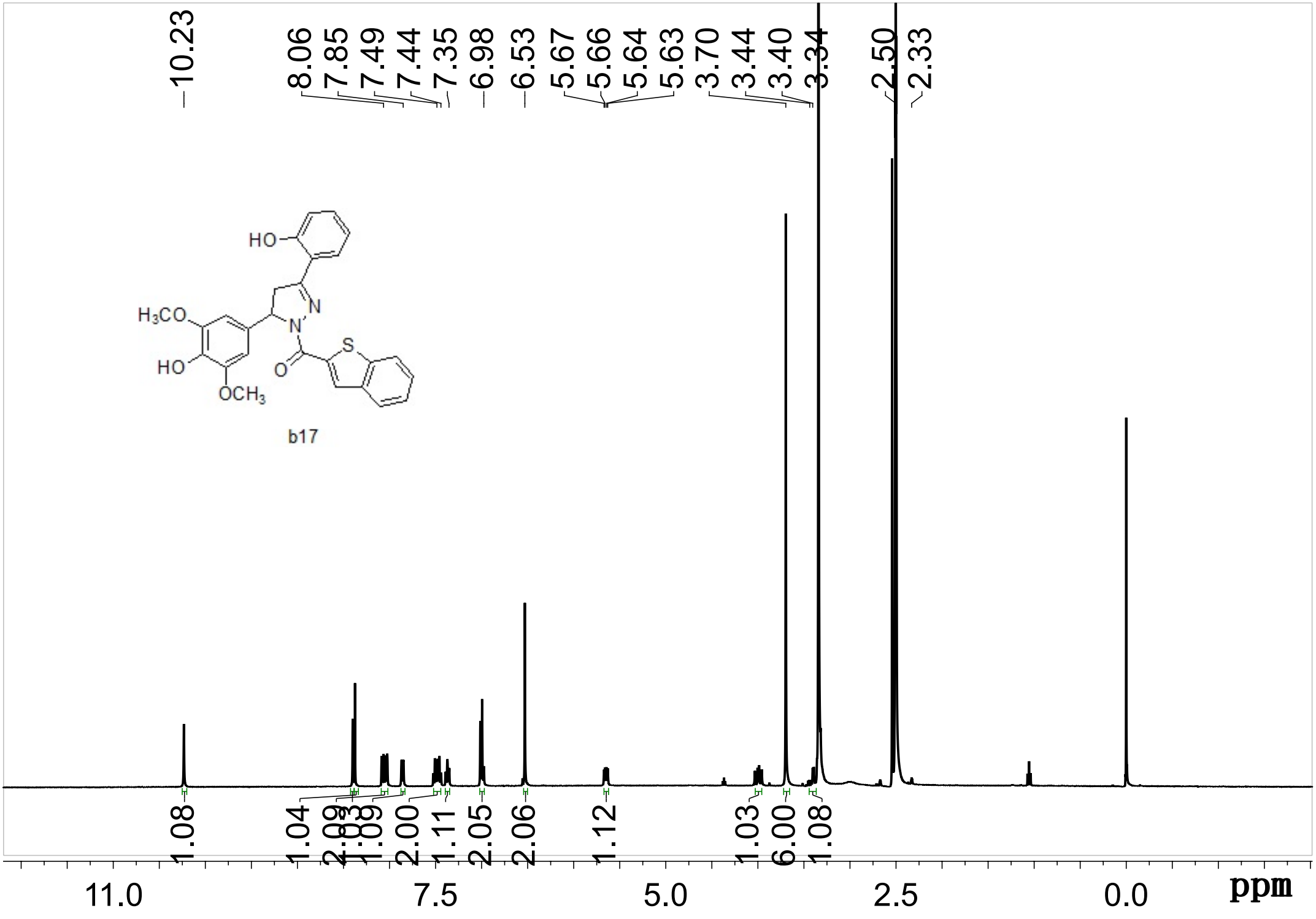
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3.44
3.40
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HO
H3CO
HO
OCH3
N
N
S
O
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1.04
2.09
1.03
1.09
2.00
1.11
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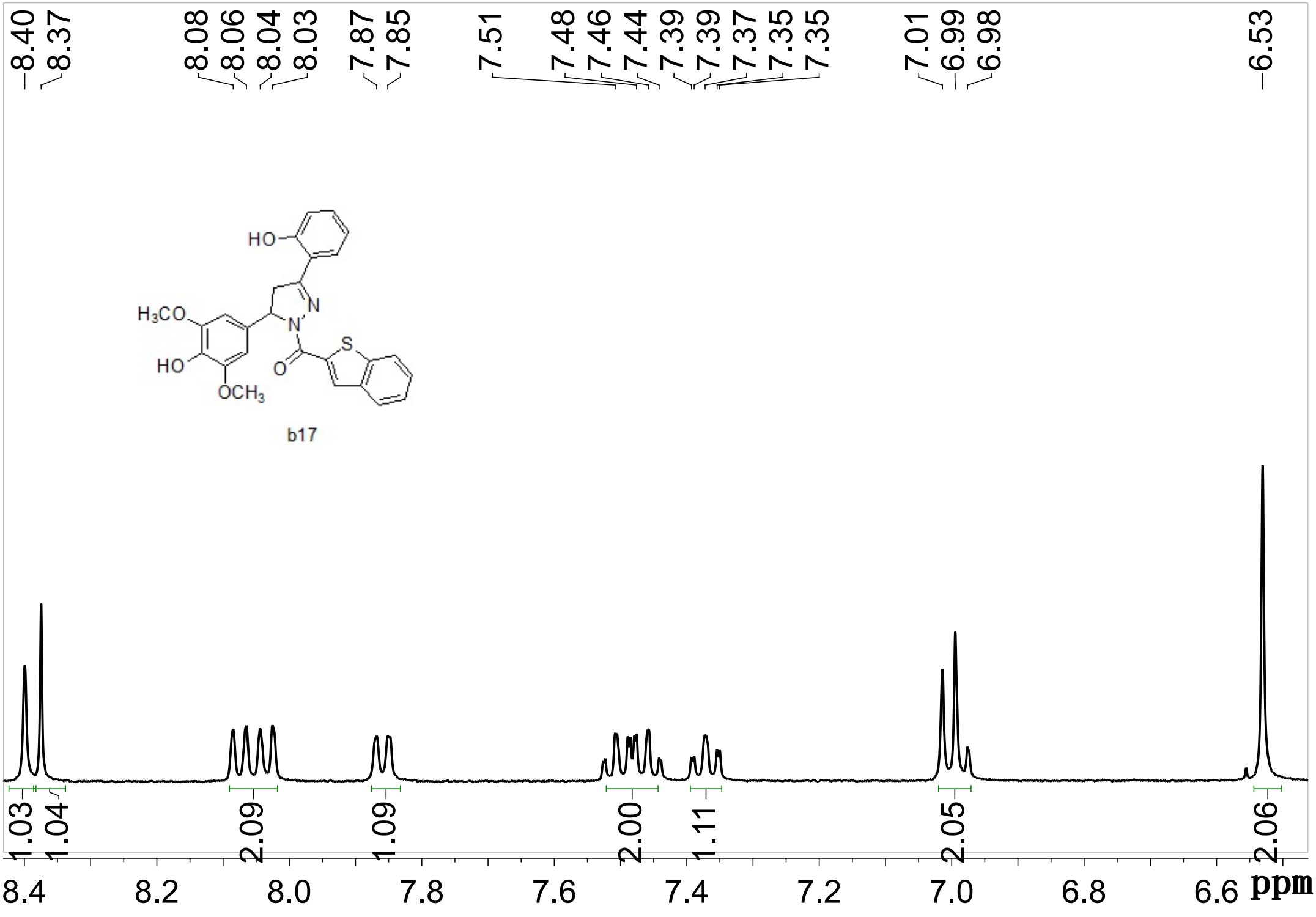
b17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7.37
7.35
7.35
7.01
6.99
6.98
6.53
HO
H3CO
HO
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N
N
O
S
b17
1.03
1.04
2.09
1.09
2.00
1.11
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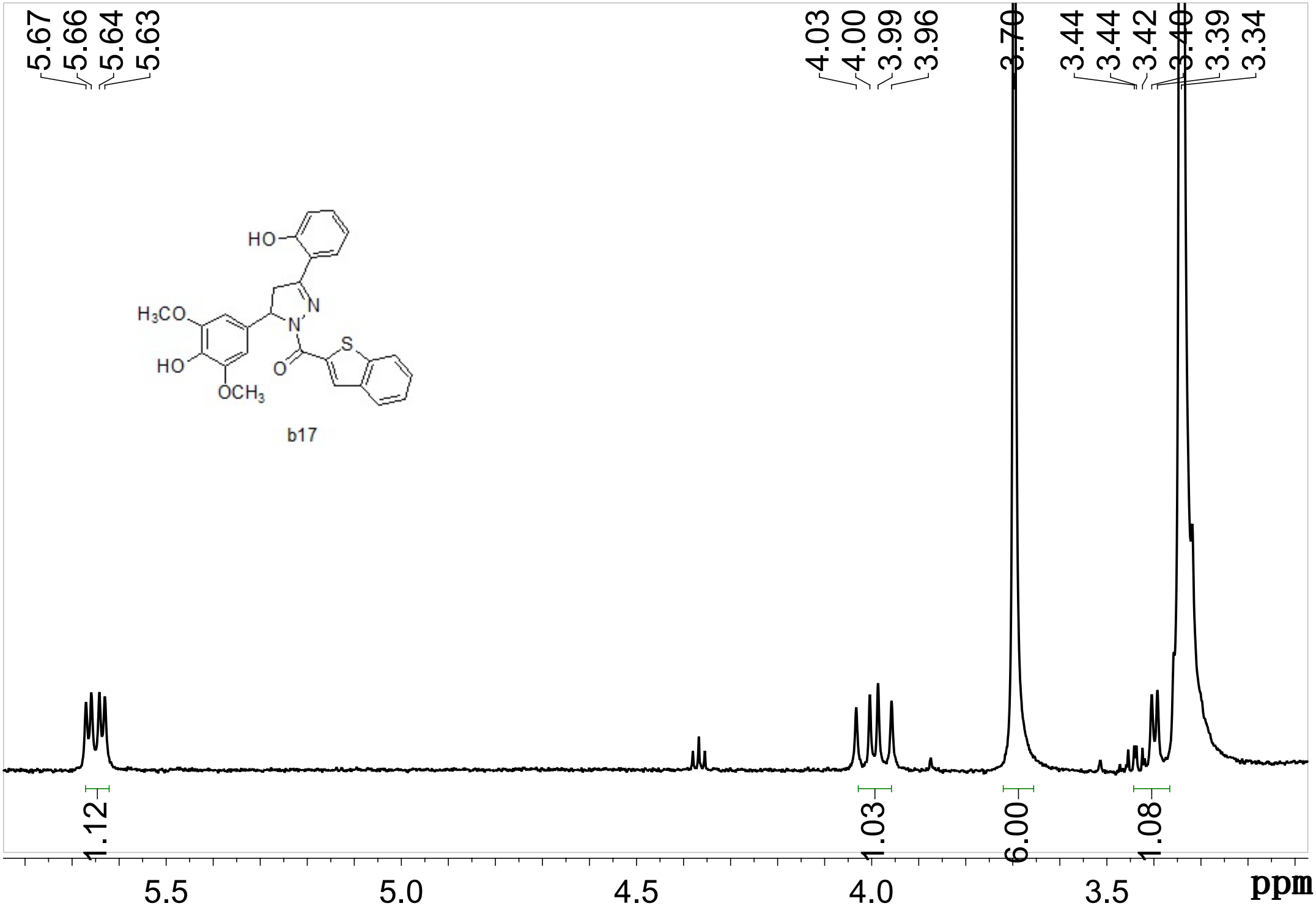
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H3CO
HO
OCH3
b17
1.12
1.03
6.00
1.08
5.5
5.0
4.5
4.0
3.5
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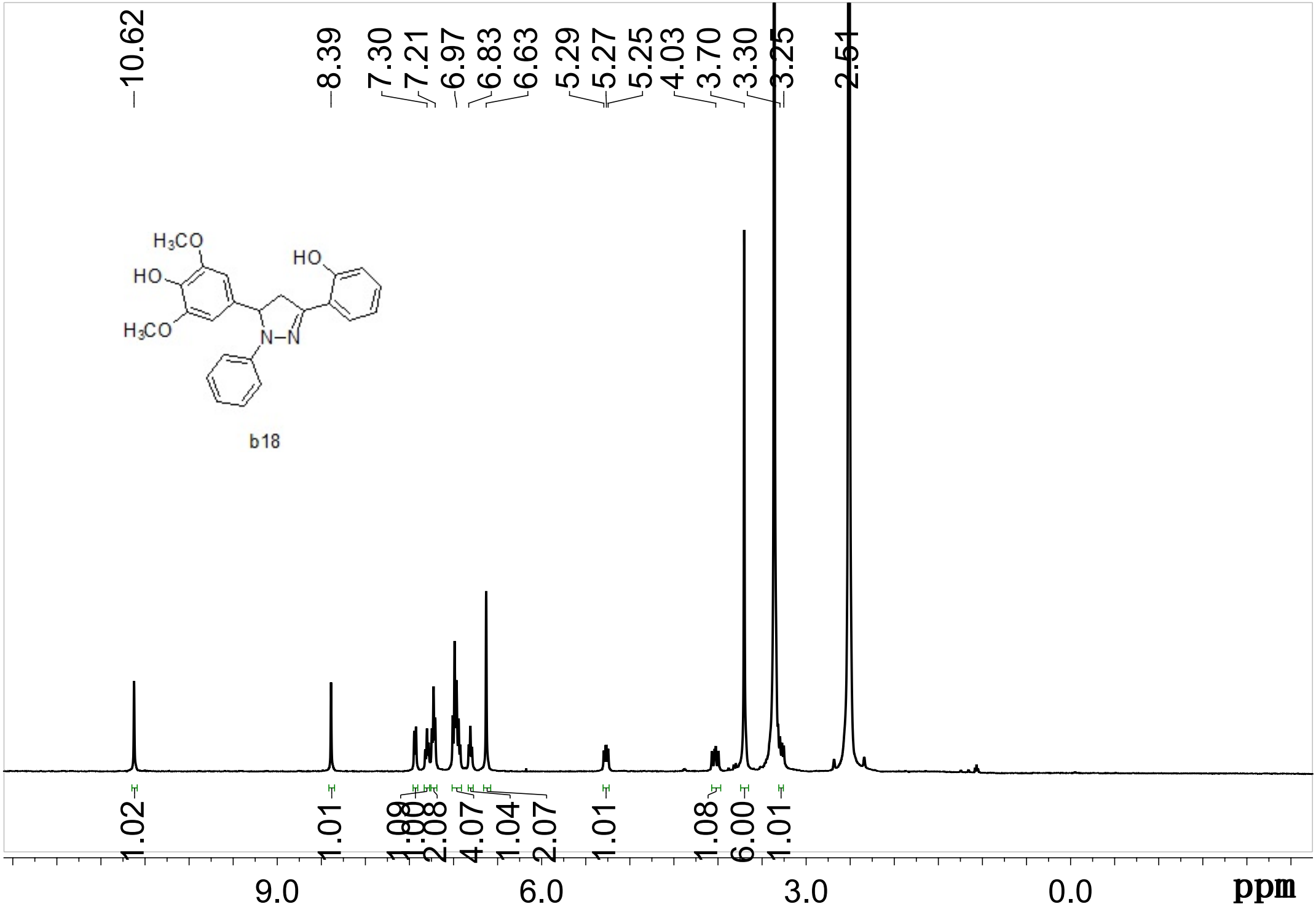
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4.03
3.70
3.30
3.25
2.51
H3CO
HO
HO
H3CO
N–N
b18
1.02
1.01
1.08
2.08
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2.07
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1.08
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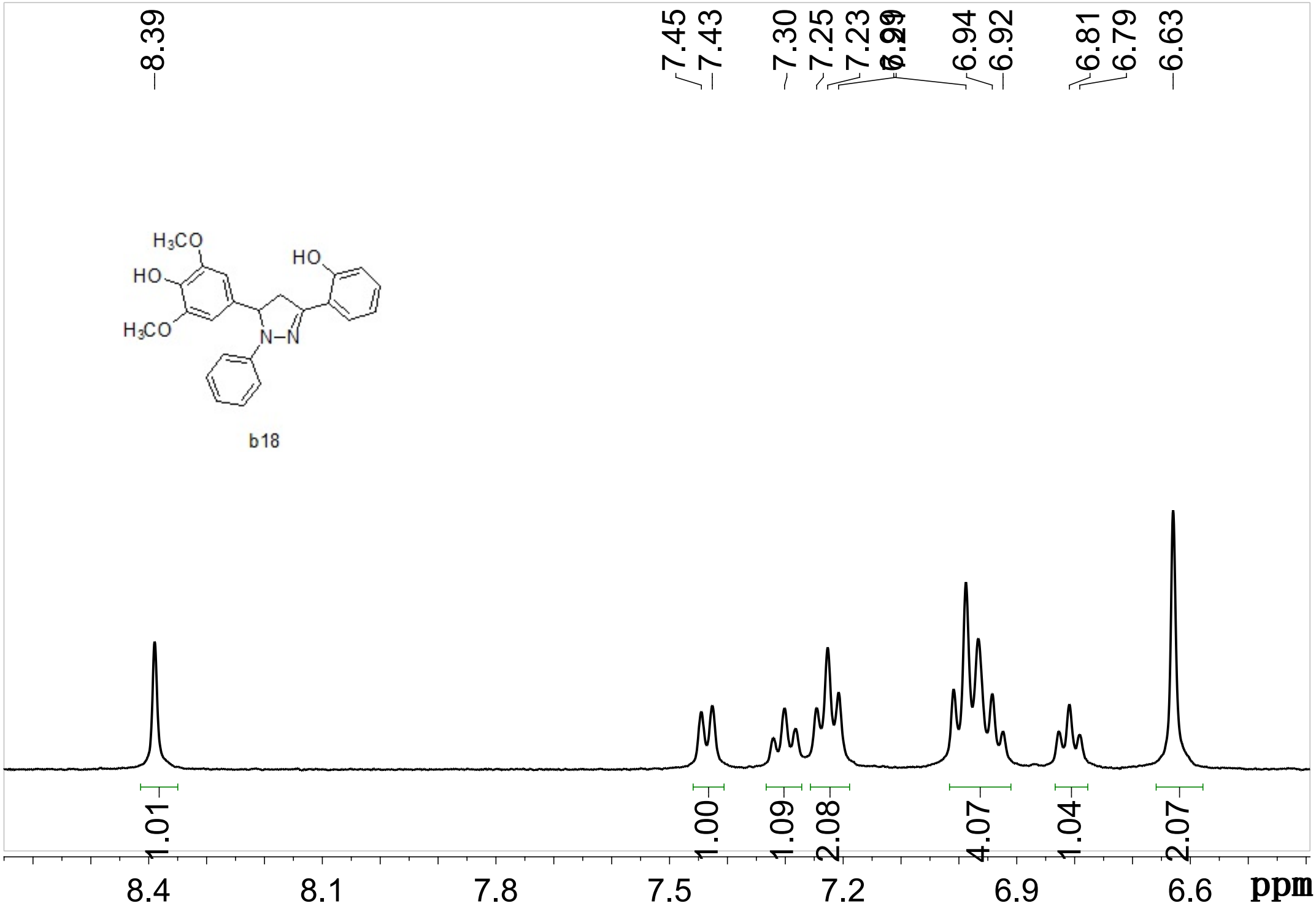
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HO
H3CO
N–N
b18
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1.00
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2.07
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6.6
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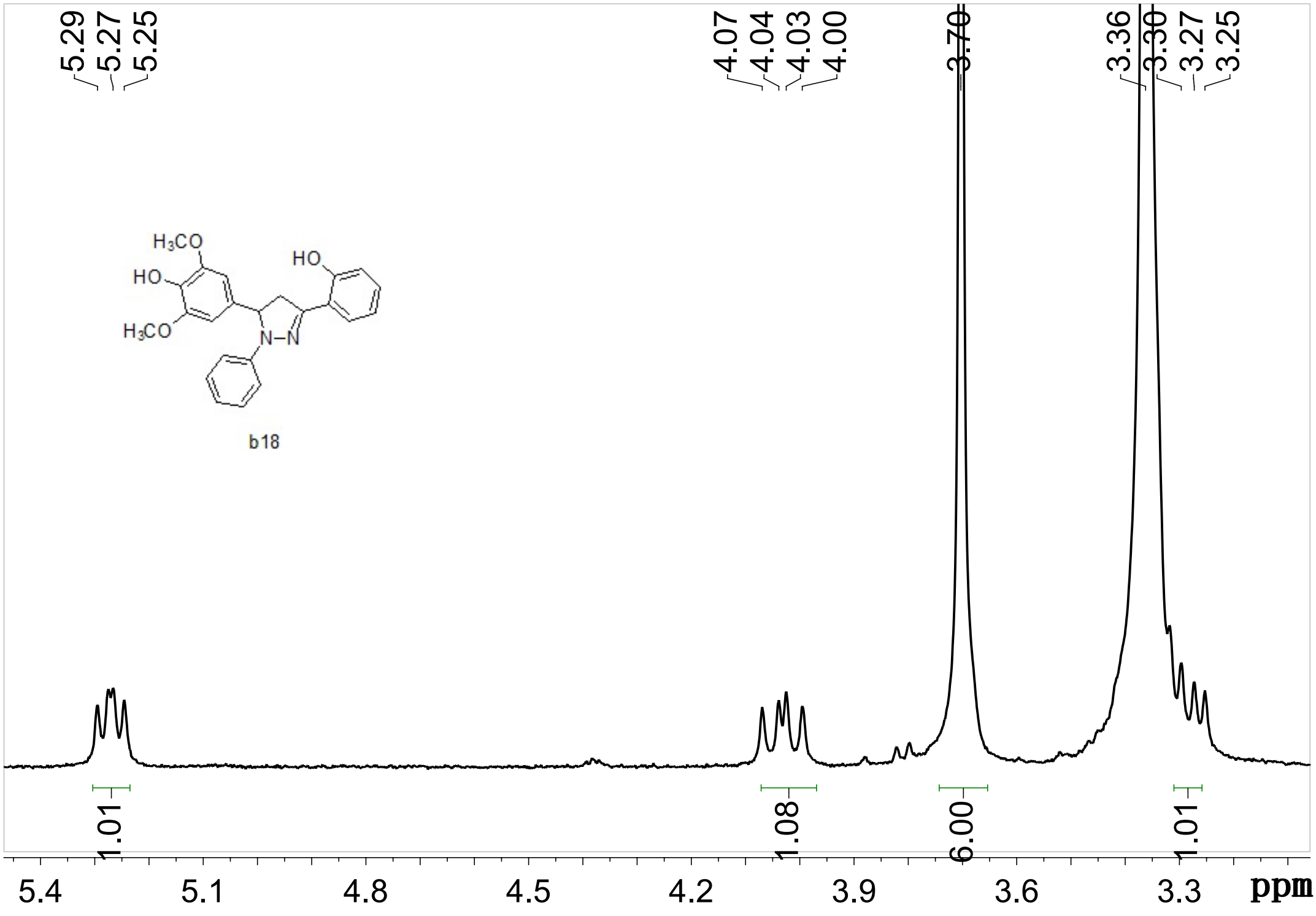
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HO
H3CO
HO
N–N
b18
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5.4
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3.3
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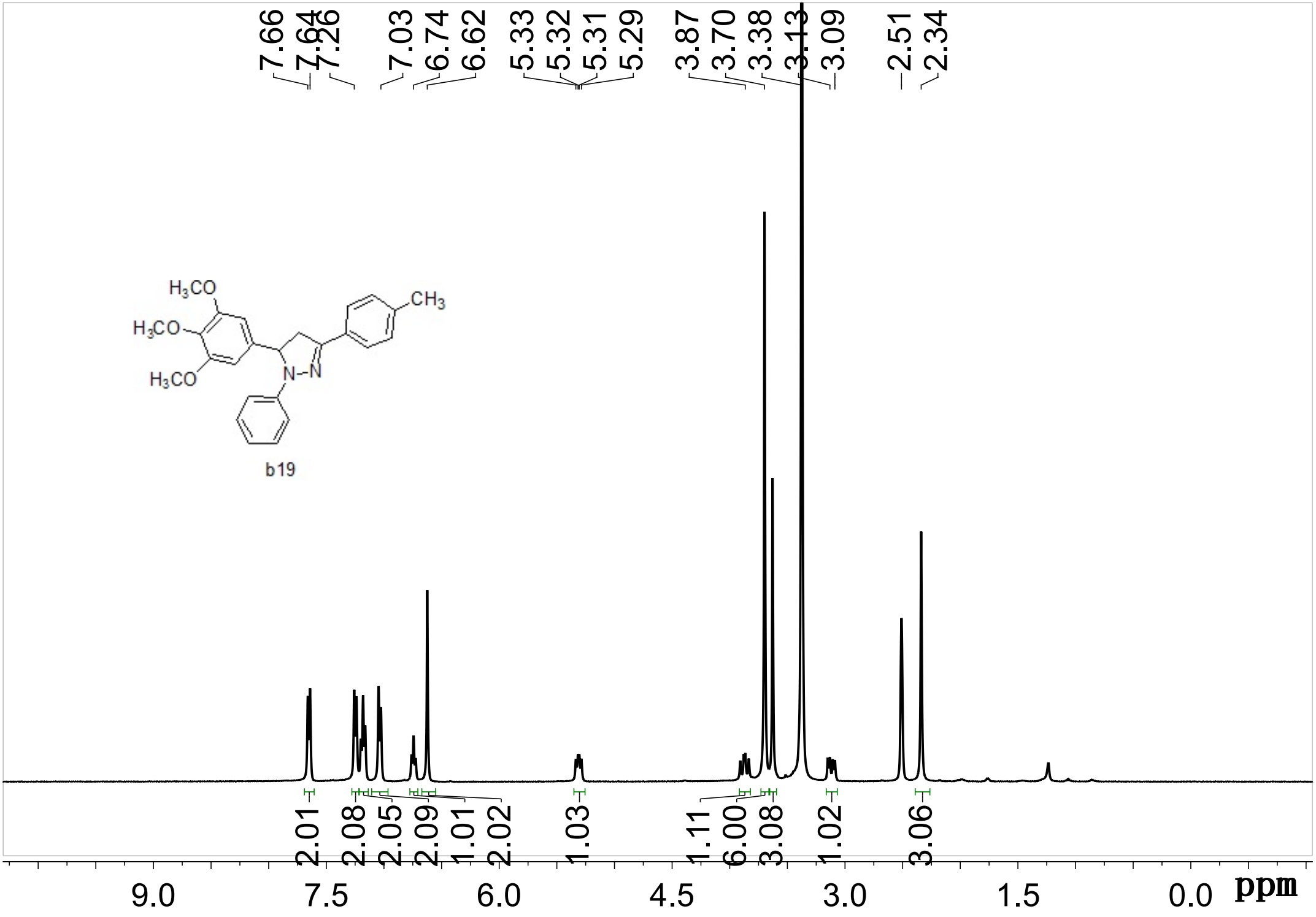
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6.62
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3.70
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3.13
3.09
2.51
2.34
H3CO
H3CO
H3CO
CH3
N–N
b19
2.01
2.08
2.05
2.09
1.01
2.02
1.03
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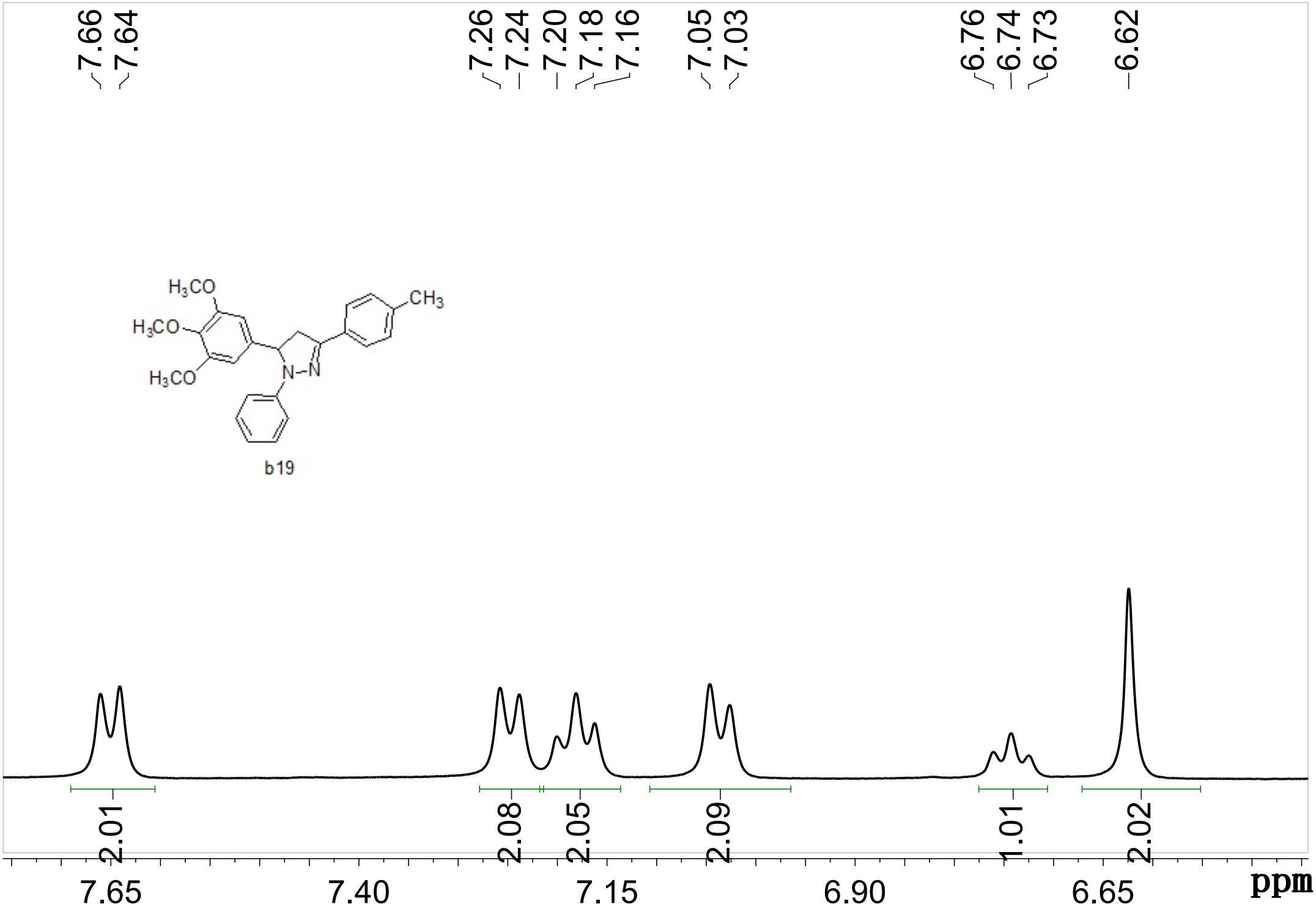
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7.26
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7.18
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6.62
H3CO
H3CO
H3CO
CH3
N–N
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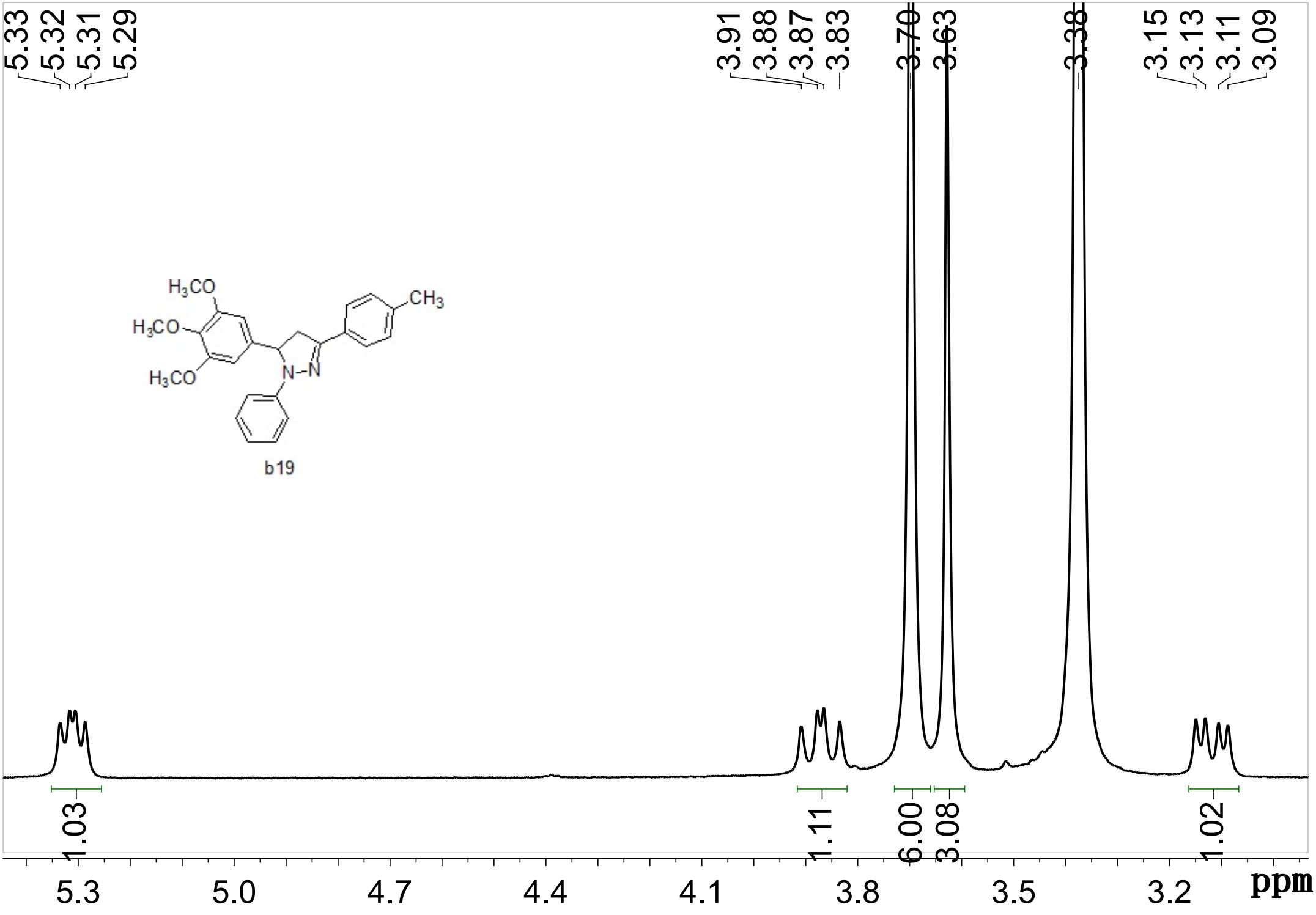
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3.11
3.09
H3CO
H3CO
H3CO
CH3
N–N
b19
1.03
1.11
6.00
3.08
1.02
5.3
5.0
4.7
4.4
4.1
3.8
3.5
3.2
ppm