Electronic Supplementary Material (ESI) for Journal of Materials Chemistry B.

Self-crosslinked Polyvinyl alcohol/cellulose nanofibrils cryogels loaded with synthesized aminophosphonates as antimicrobial wound dressings

Dalia A. Elsherbiny [1,2], Abdelrahman M. Abdelgawad [3,4,5*], Bahaa A. Hemdan [6], Ahmed S. Montaser [3], Ibrahim El-Tantawy El-Sayed[1], Stefan Jockenhövel [2,7], and Samaneh Ghazanfari [* 2,7]

[1] Department of Chemistry, Faculty of Science, Menoufia University, Egypt
[2] Aachen-Maastricht Institute for Biobased Materials, Faculty of Science and Engineering, Maastricht University, the Netherlands
[3] Textile Research and Technology Institute, National Research Centre (Affiliation ID: 60014618), Dokki, Cairo, Egypt
[4] Textile Engineering Chemistry and Science Department, Wilson College of Textiles, North Carolina State University, Raleigh, NC, USA
[5] Chemistry Department, Faculty of Science, New Mansoura University, New Mansoura City 35511, Egypt
[6] Water Pollution Research Department, National Research Centre, 33 El-Bohouth St., Dokki, Giza 12622, Egypt
[7] Department of Biohybrid & Medical Textiles (BioTex), AME-Helmholtz Institute for Biomedical Engineering, RWTH Aachen University, Forckenbeckstrabe 55, 52072 Aachen, Germany

Corresponding author: Abdelrahman M. Abdelgawad (aabdelg@ncsu.edu) and Dr. Samaneh Ghazanfari (Samaneh.ghazanfari@maastrichtuniversity.nl)

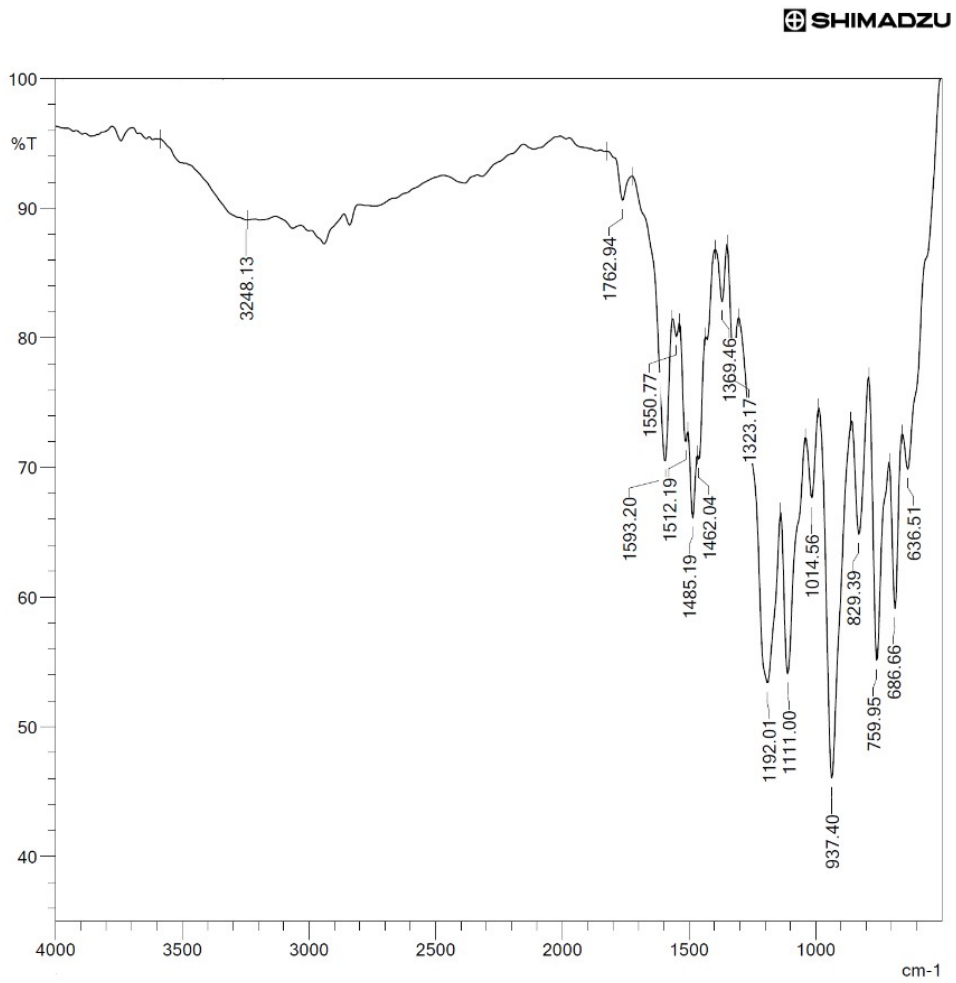


Figure S1: FTIR of diphenyl (((4-(4-chlorophenyl)thiazol-2-yl)amino)(4-hydroxy-3,5-dimethoxyphenyl)methyl)phosphonate (5)

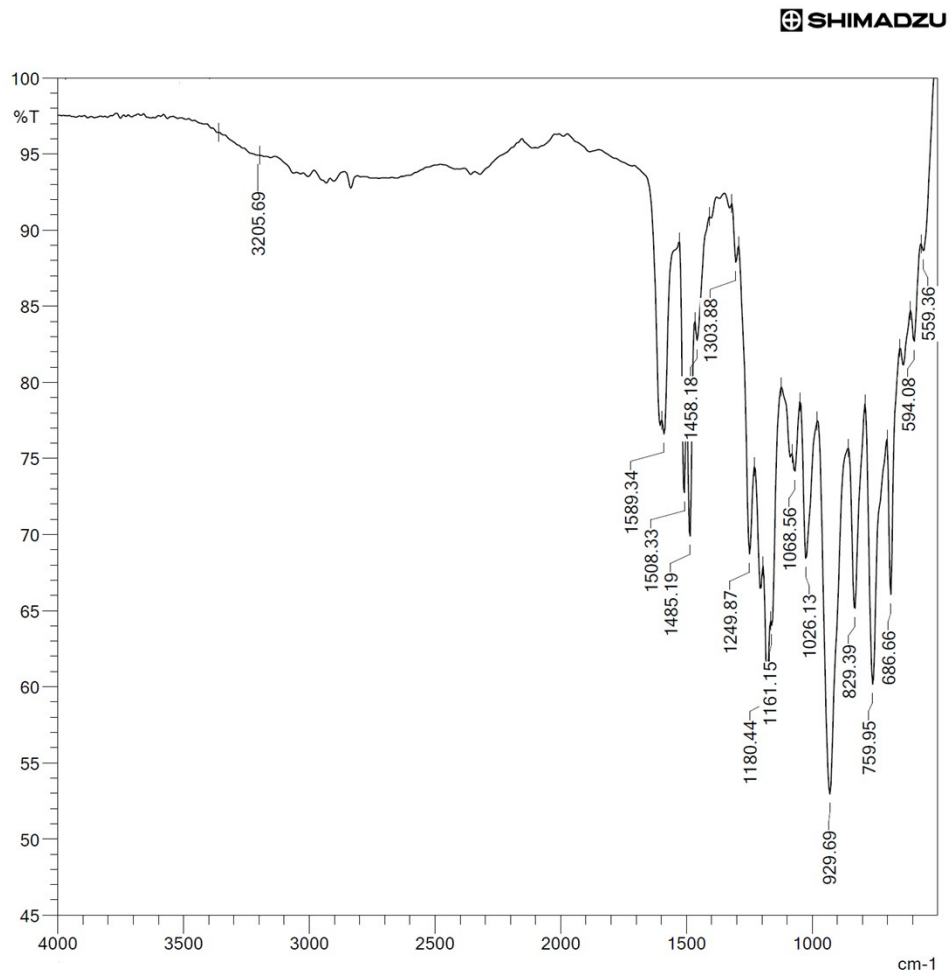


Figure S2: FTIR of diphenyl (((4-(4-chlorophenyl)thiazol-2-yl)amino)(4-methoxyphenyl)methyl) phosphonate (6)

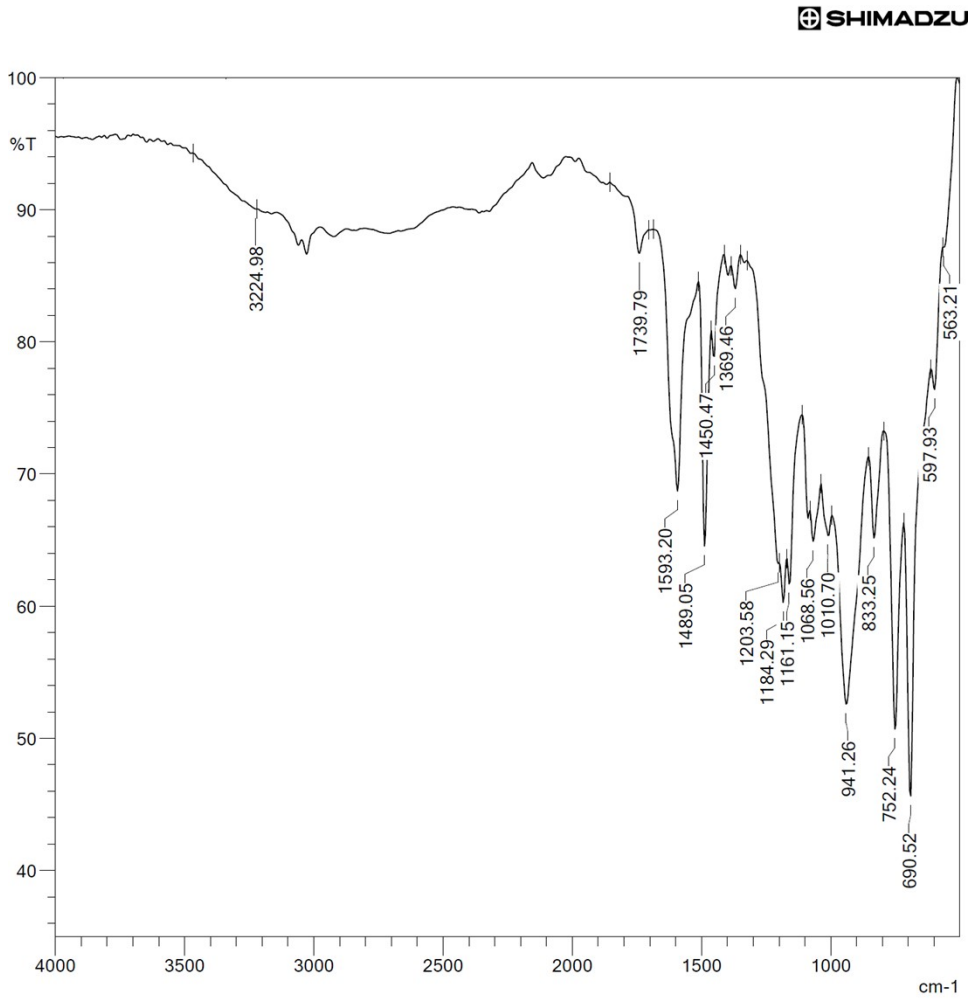


Figure S3: FTIR of diphenyl (1-((4-(4-chlorophenyl)thiazol-2-yl)amino)-2-phenylethyl)phosphonate (7)

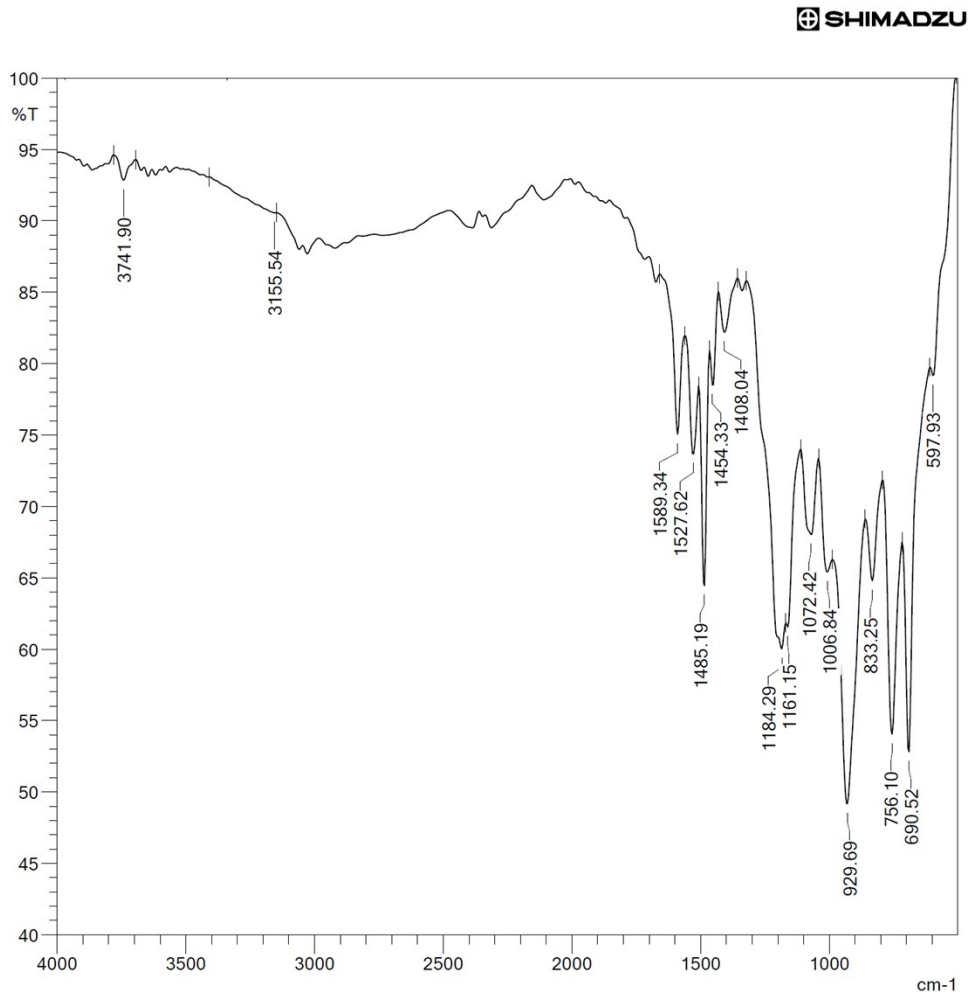
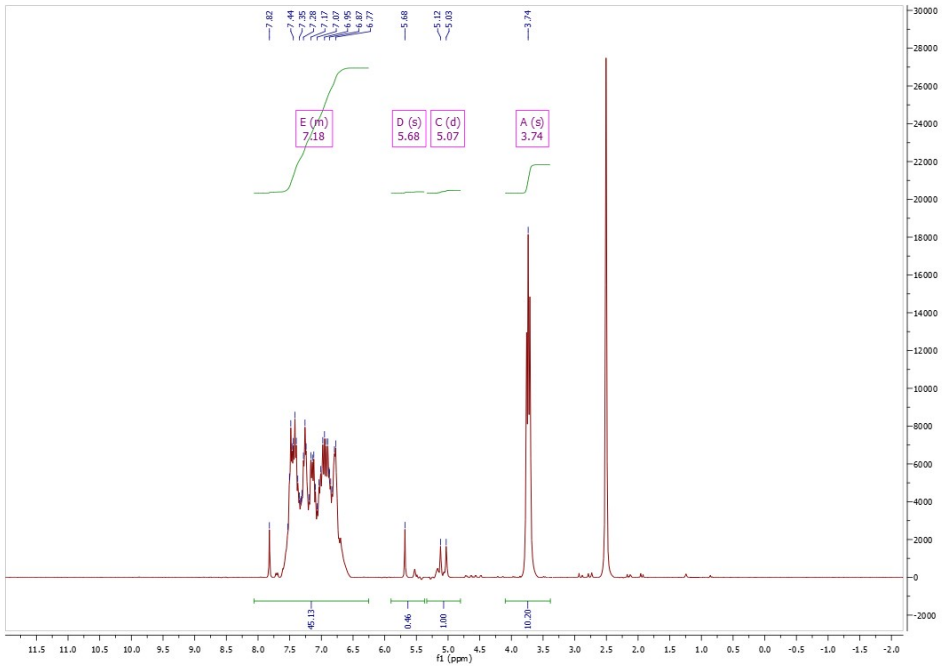
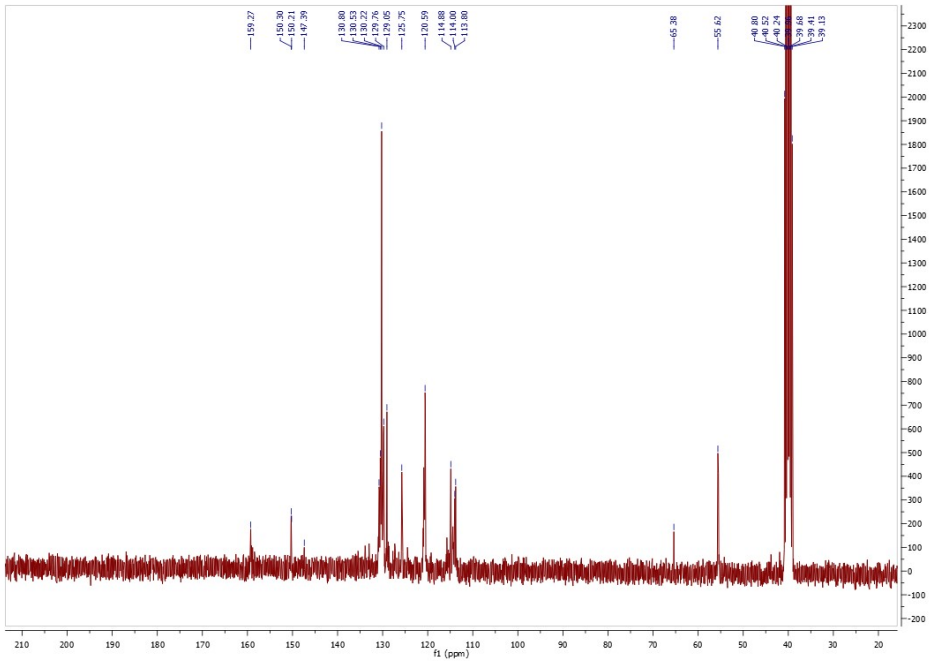


Figure S4: FTIR of diphenyl (E)-(1-((4-(4-chlorophenyl)thiazol-2-yl)amino)-3-phenylallyl)phosphonate (8)


7.82
7.44
7.35
7.28
7.17
7.10
6.95
6.87
6.77
5.68
5.12
5.03
3.74
E (m)
7.18
D (s)
5.68
C (d)
5.07
A (s)
3.74
45.13
0.46
1.00
10.20
f1 (ppm)


159.27
150.30
150.21
147.39
130.80
130.53
130.22
129.76
129.05
125.75
120.59
114.88
114.60
113.80
65.38
55.62
40.80
40.52
40.24
39.96
39.68
39.41
39.13
f1 (ppm)

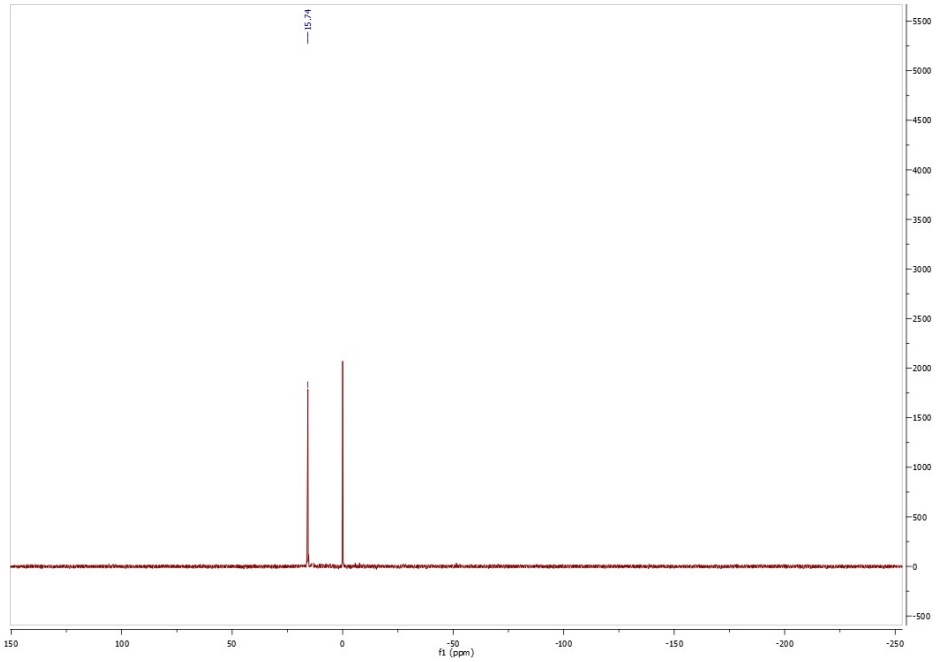
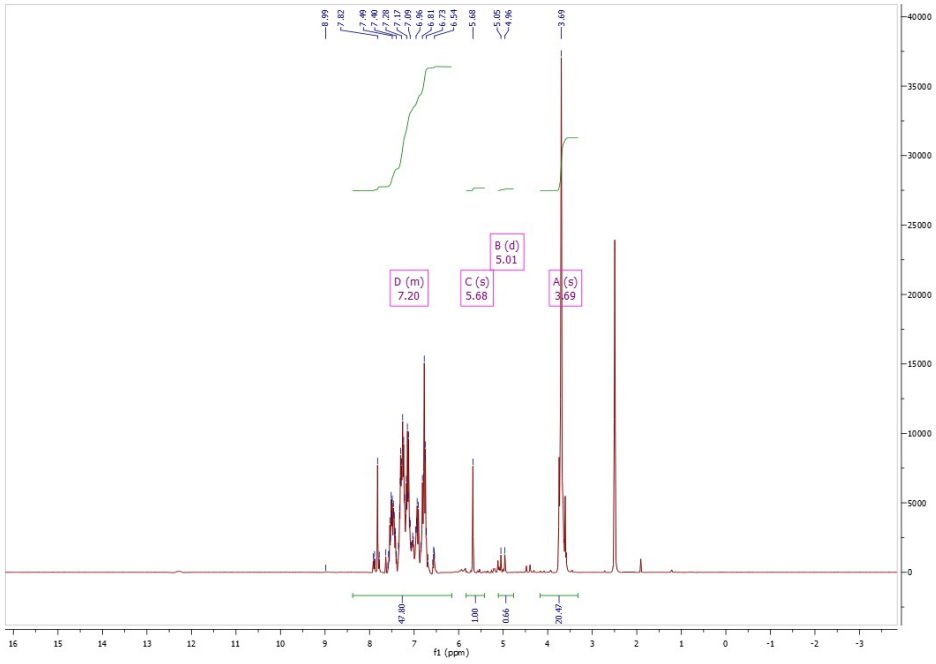
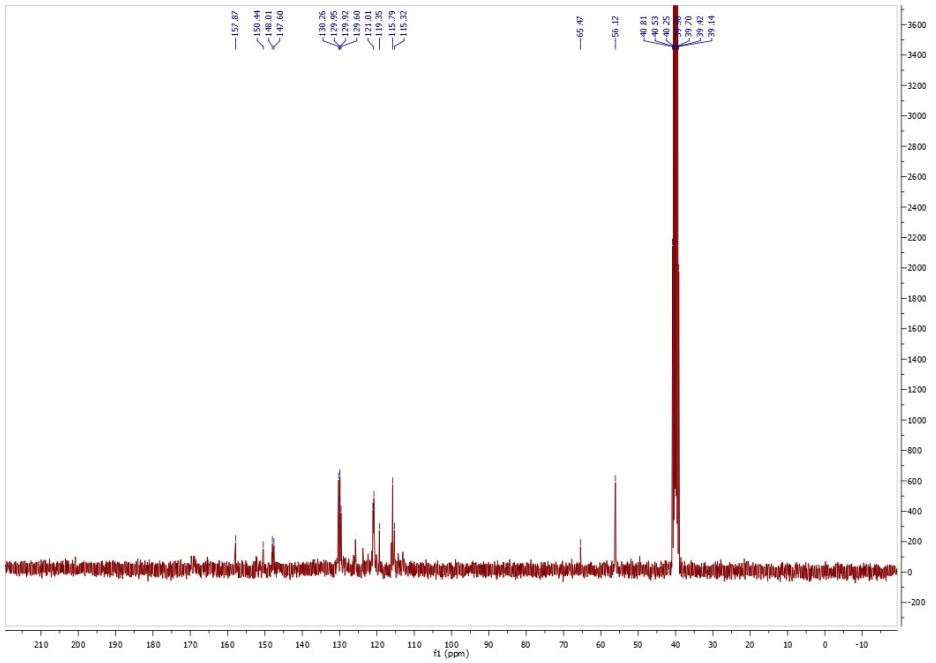


Figure S5: ^{1}H-NMR, ^{13}C-NMR AND ^{31}P-NMR of Compound (5)


8.99
7.82
7.49
7.48
7.28
7.17
7.09
6.96
6.81
6.73
6.54
5.68
5.05
4.96
3.69
B (d)
5.01
D (m)
7.20
C (s)
5.68
A (s)
3.69
47.80
1.00
0.66
20.47
f1 (ppm)


157.87
150.44
148.01
147.60
130.26
129.95
129.82
129.60
121.01
119.35
115.79
115.32
65.47
56.12
40.81
40.53
40.25
39.98
39.70
39.42
39.14
f1 (ppm)

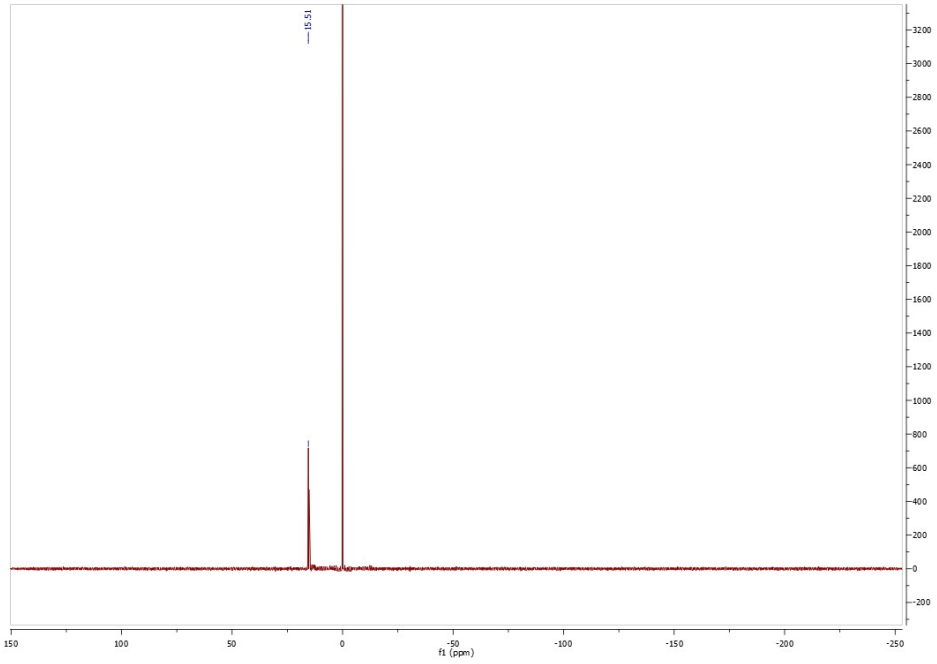
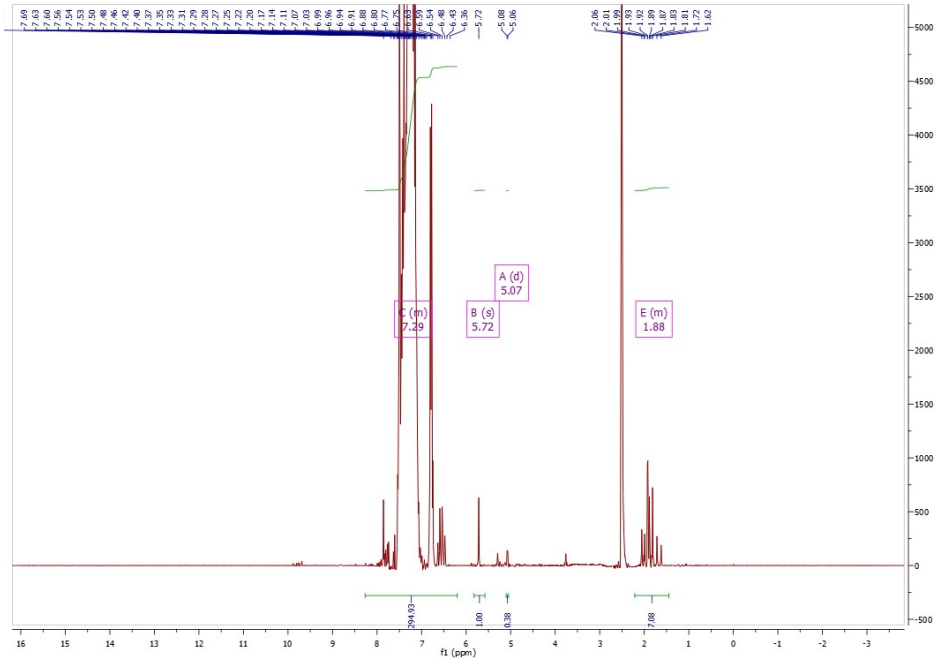
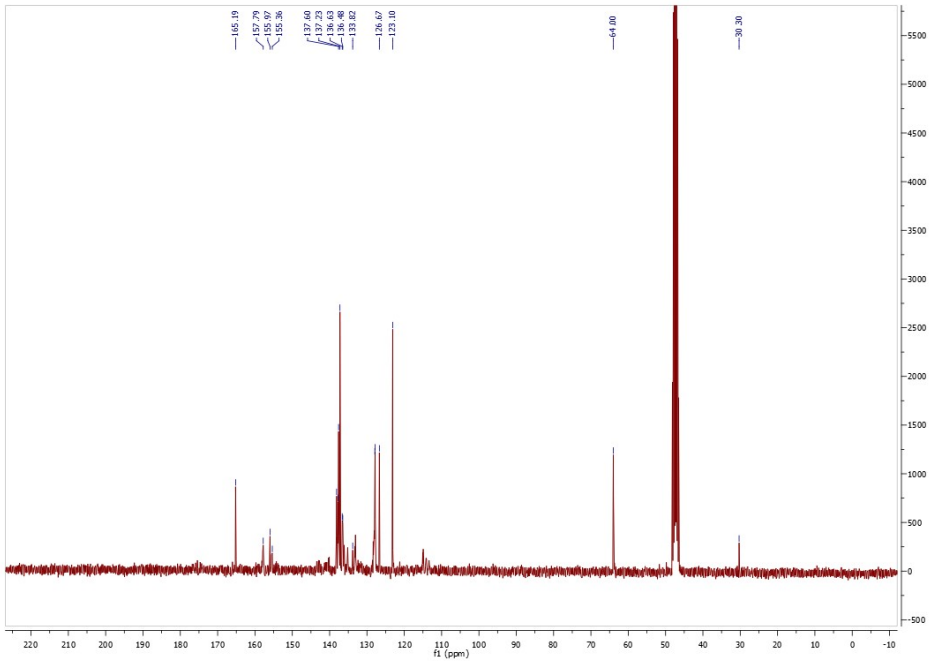


Figure S6: ^{1}H-NMR, ^{13}C-NMR AND ^{31}P-NMR of Compound (6)


A (d)
5.07
B (s)
5.72
C (m)
7.29
E (m)
1.88
f1 (ppm)


165.19
157.79
155.97
155.36
137.60
137.23
136.63
136.48
133.82
126.67
123.10
64.00
30.30
f1 (ppm)

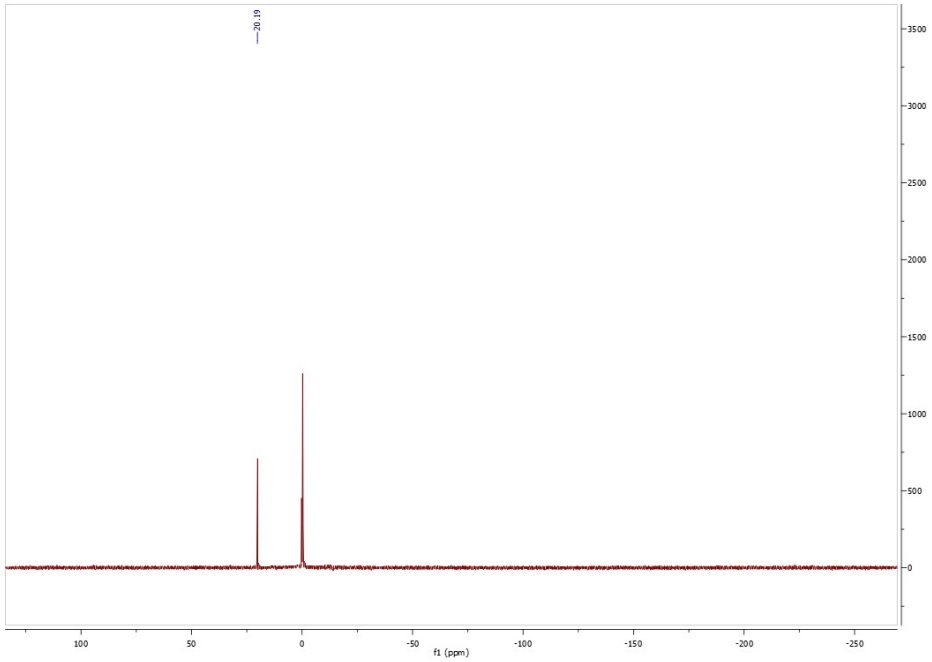
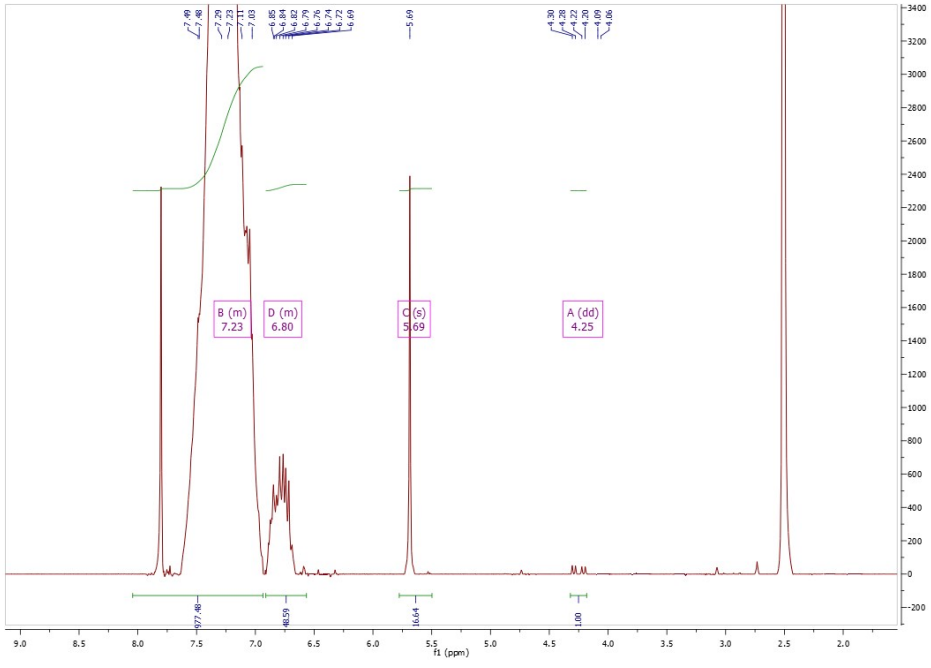
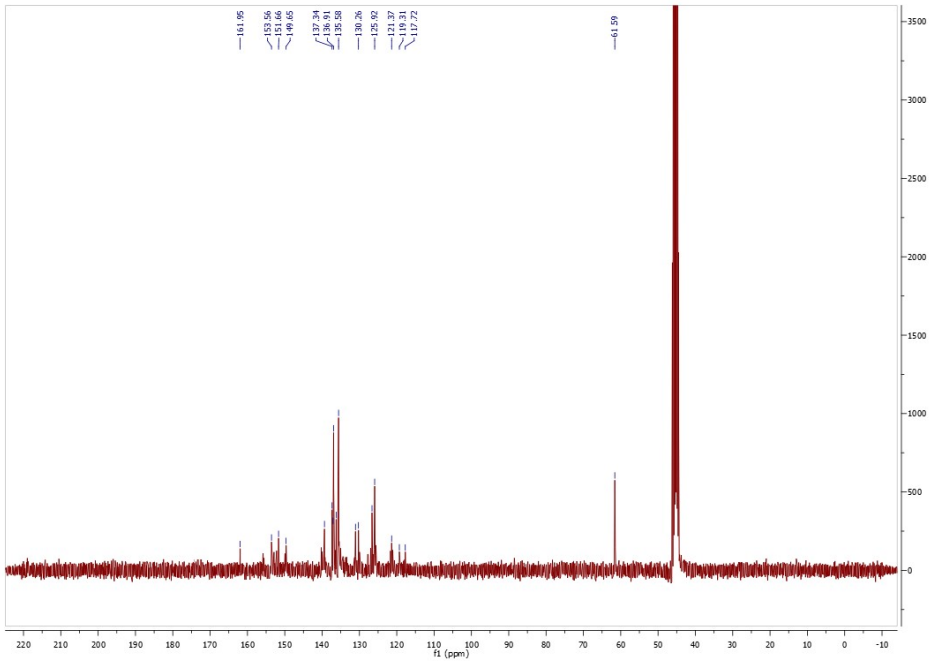


Figure S7: ^{1}H-NMR, ^{13}C-NMR AND ^{31}P-NMR of Compound (7)


7.49
7.48
7.29
7.23
7.11
7.05
6.85
6.84
6.83
6.79
6.76
6.74
6.72
6.69
5.69
4.30
4.28
4.27
4.20
4.09
4.06
B (m)
7.23
D (m)
6.80
C (s)
5.69
A (dd)
4.25
977.40
48.59
16.64
1.00
f1 (ppm)


161.95
153.56
151.66
149.65
137.34
136.91
135.58
130.26
125.92
121.37
119.31
117.72
61.59
f1 (ppm)

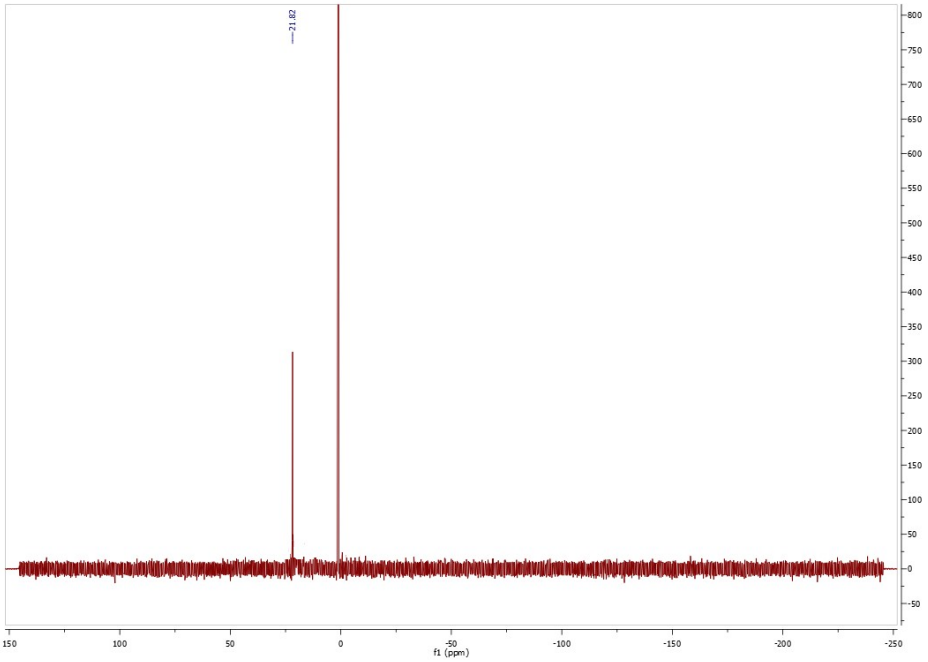


Figure S8: ^{1}H-NMR, ^{13}C-NMR AND ^{31}P-NMR of Compound (8)

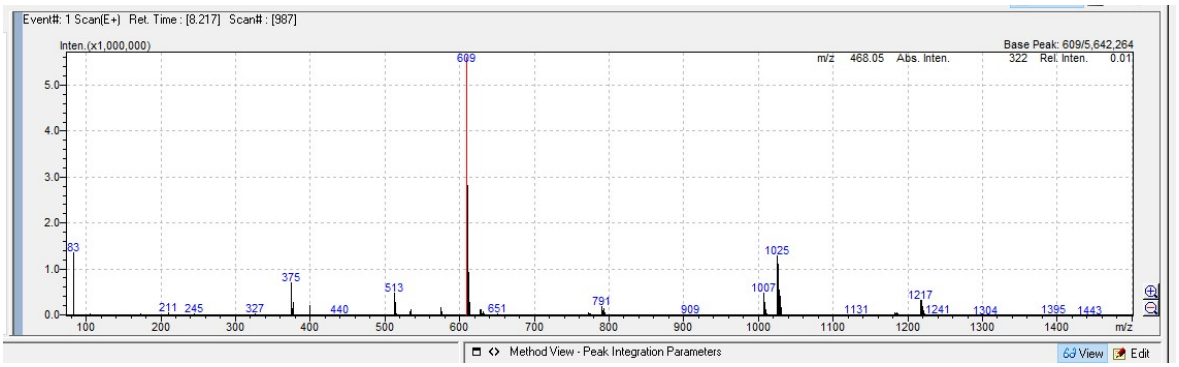


Figure S9: Mass Spec. of compound (5)

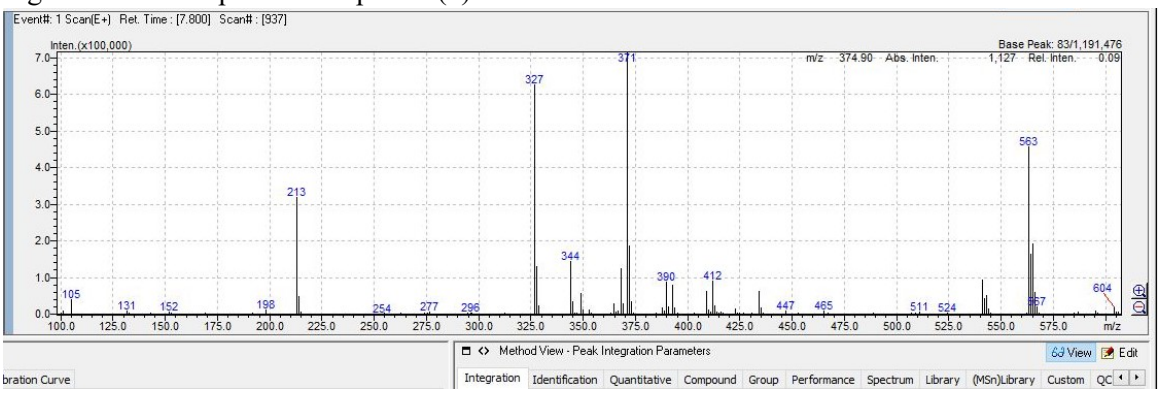


Figure S10: Mass Spec. of compound (6)

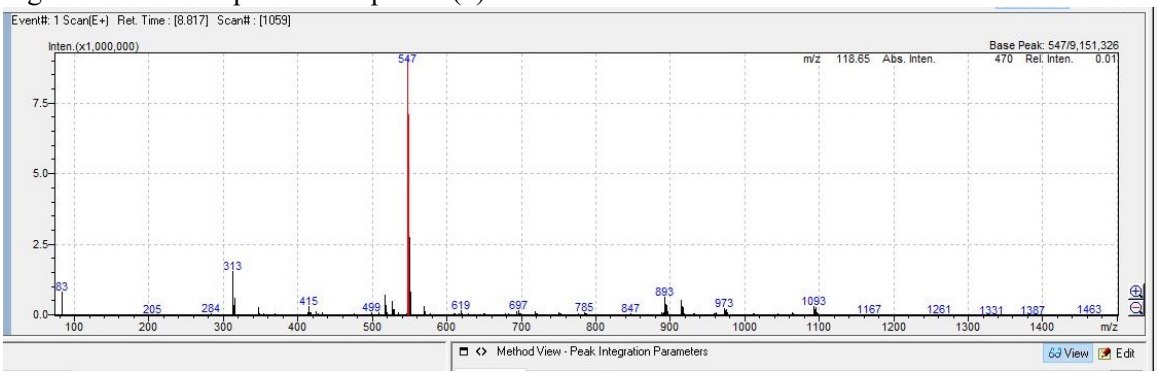


Figure S11: Mass Spec. of compound (7)

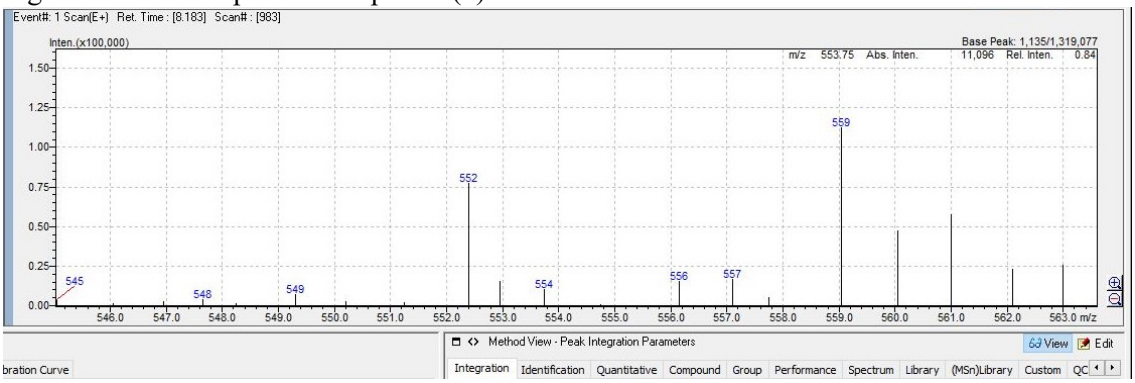


Figure S12: Mass Spec. of compound (8)