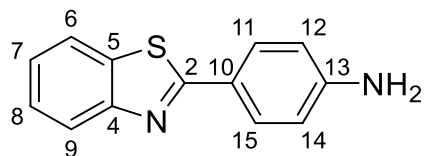


Príloha 1 – ^1H NMR spektrum 4-(benzo[*d*]thiazol-2-yl)anilínu



^1H NMR (300 MHz, CDCl_3) δ :

8,02 (d, $J = 8,1$ Hz, 1H, C9),

7,92 (d, $J = 7,9$ Hz, 2H, C11, C15),

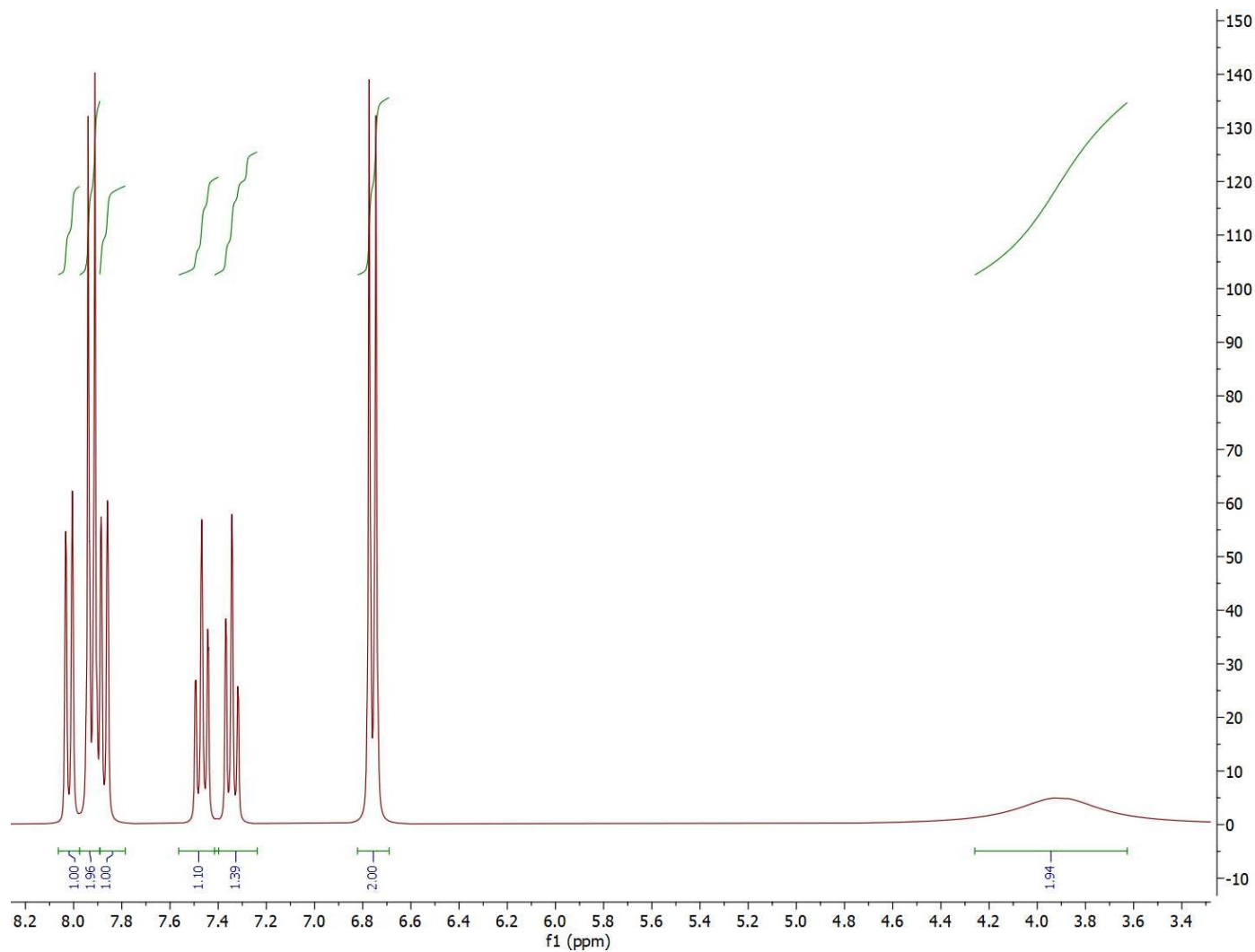
7,87 (d, $J = 8,1$ Hz, 1H, C6),

7,47 (t, $J = 7,3$ Hz, 1H, C8),

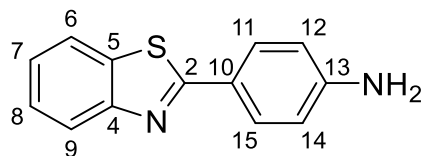
7,34 (t, $J = 7,3$ Hz, 1H, C7),

6,76 (d, $J = 8,6$ Hz, 2H, C12, C14),

3,91 (s, 2H, NH_2).

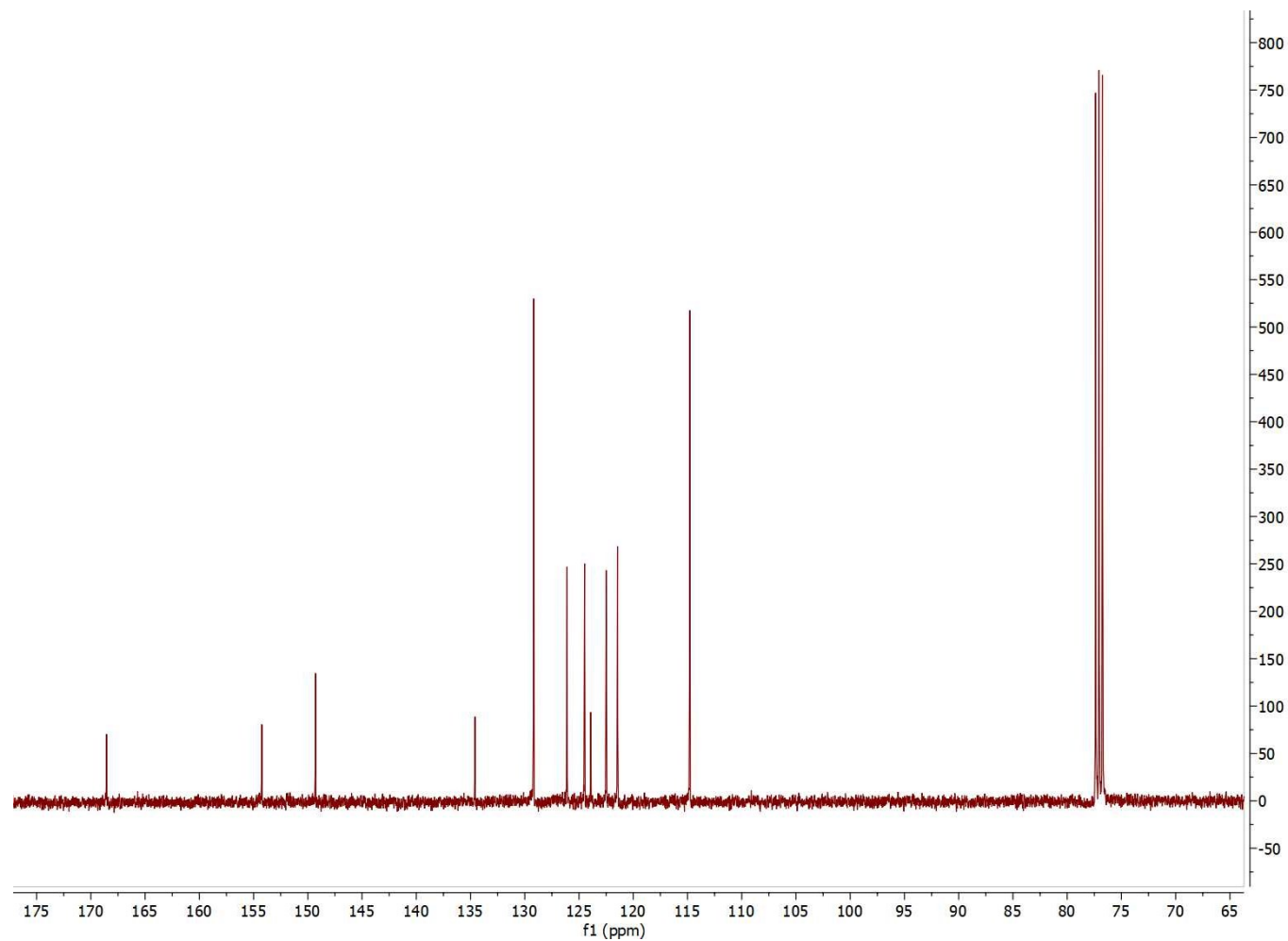


Príloha 2 – ^{13}C NMR spektrum 4-(benzo[d]thiazol-2-yl)anilínu

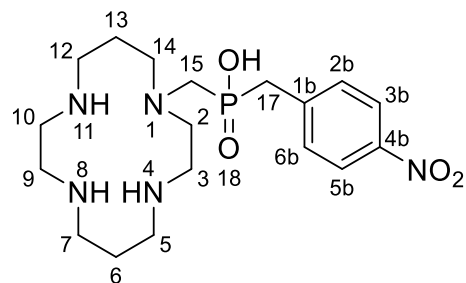


^{13}C NMR (101 MHz, CDCl_3) δ :

169,53 (C2), 153,66 (C4), 143,59 (C13),
134,08 (C5), 129,18 (C11, C15), 126,08
(C8), 124,41 (C7), 122,44 (C6, C9),
121,35 (C10), 114,74 (C12, C14).



Príloha 3 – ^1H NMR spektrum ((1,4,8,11-tetraazacyklotetradekan-1-yl)metyl)(4-nitrobenzyl)fosfinovej kyseliny



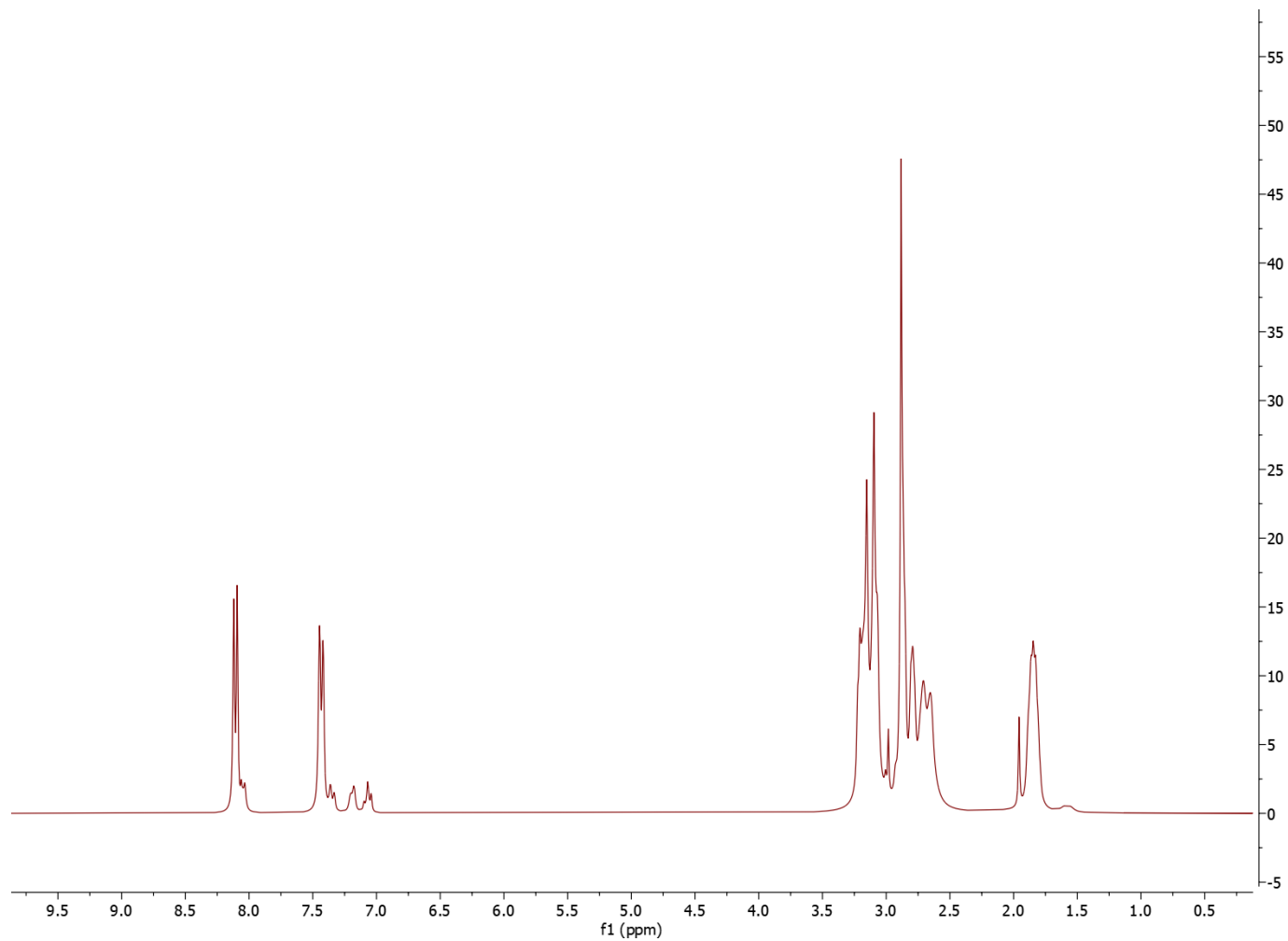
^1H NMR (300 MHz, D₂O) δ :

8,11 (d, $J = 8,4$ Hz, 2H, C3b, C5b),

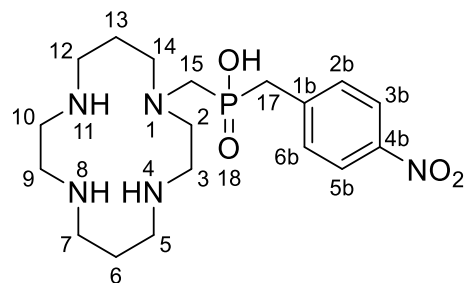
7,43 (d, $J = 8,4$ Hz, 2H, C2b, C6b),

3,49 – 2,39 (m, 22H, C2 – C14, C15),

1,85 (s, 3H, N4, N8, N11).

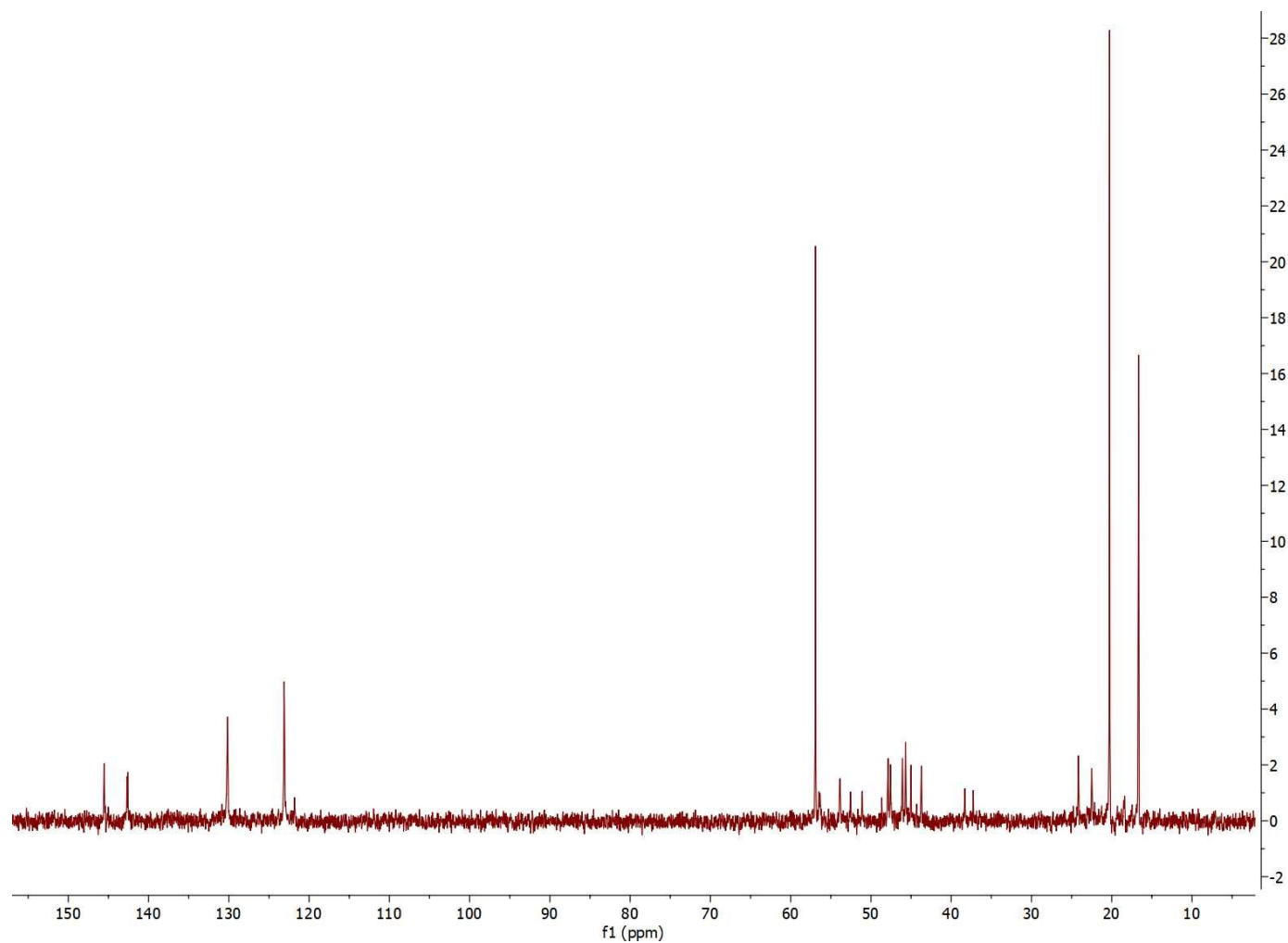


Príloha 4 – ^{13}C NMR spektrum ((1,4,8,11-tetraazacyklotetradekan-1-yl)metyl)(4-nitrobenzyl)fosfínovej kyseliny

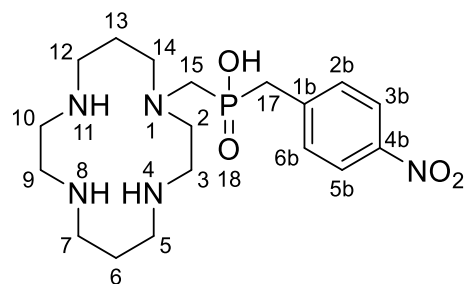


^{13}C NMR (101 MHz, D_2O) δ :

145,53 (C4b), 142,64 (C1b), 130,16 (C2b, C6b), 123,10 (C3b, C5b), 56,47 (C14), 53,87 (C2), 52,54 (C15), 51,09 (C12), 47,88 (C3), 47,57 (C5), 46,08 (C7), 45,68 (C17), 45,01 (C9), 43,72 (C10), 24,15 (C13), 22,49 (C6).



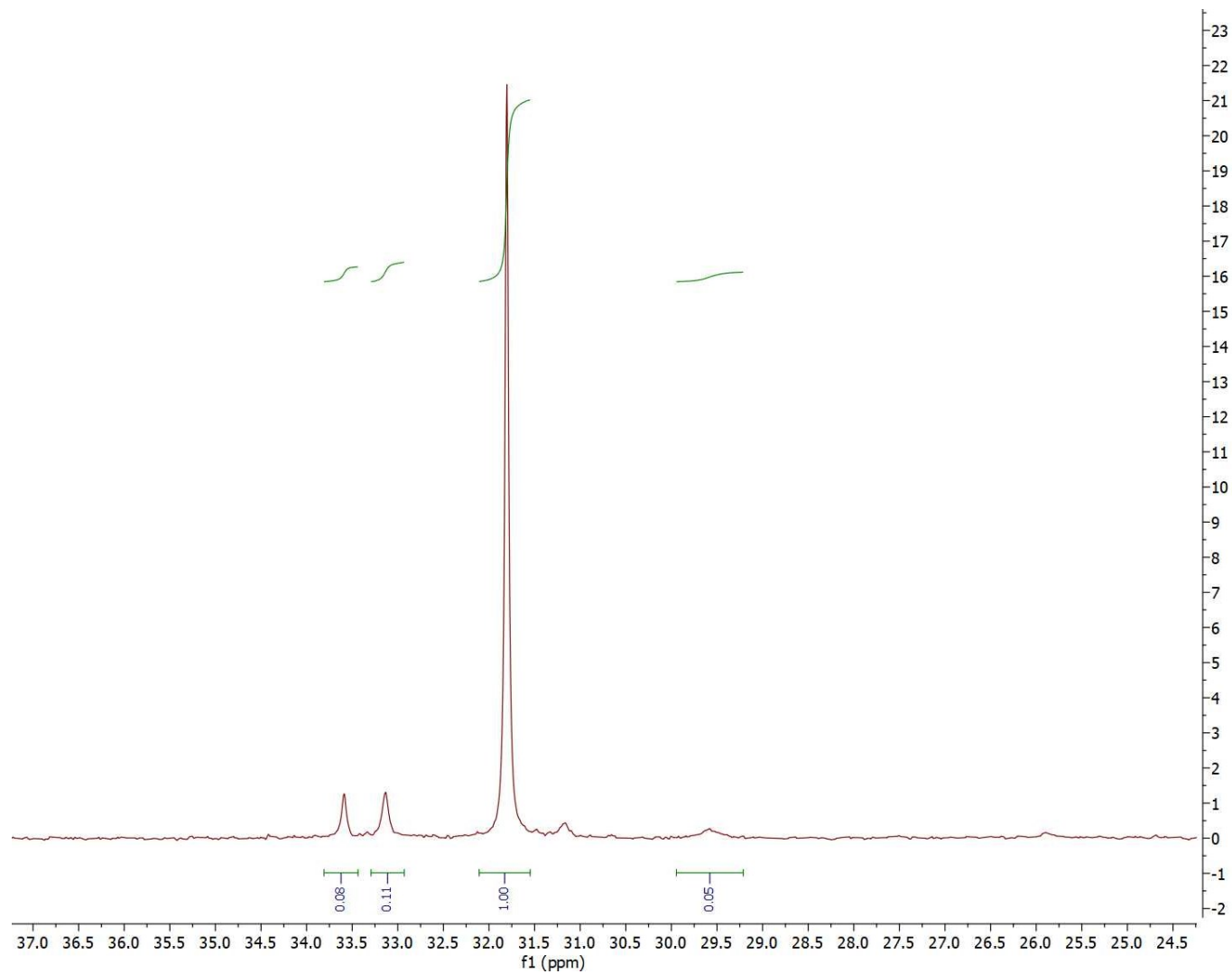
Príloha 5 – ^{31}P NMR spektrum ((1,4,8,11-tetraazacyklotetradekan-1-yl)metyl)(4-nitrobenzyl)fosfinovej kyseliny



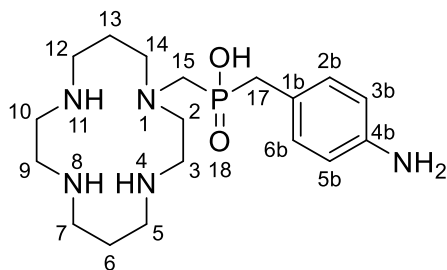
^{31}P NMR (121 MHz, D_2O) δ :

33,59, 33,14, 31,80, 29,58

(^{31}P NMR žiadaného produktu je 31,80).



Príloha 6 – ^1H NMR spektrum ((1,4,8,11-tetraazacyklotetradekan-1-yl)metyl)(4-aminobenzyl)fosfinovej kyseliny



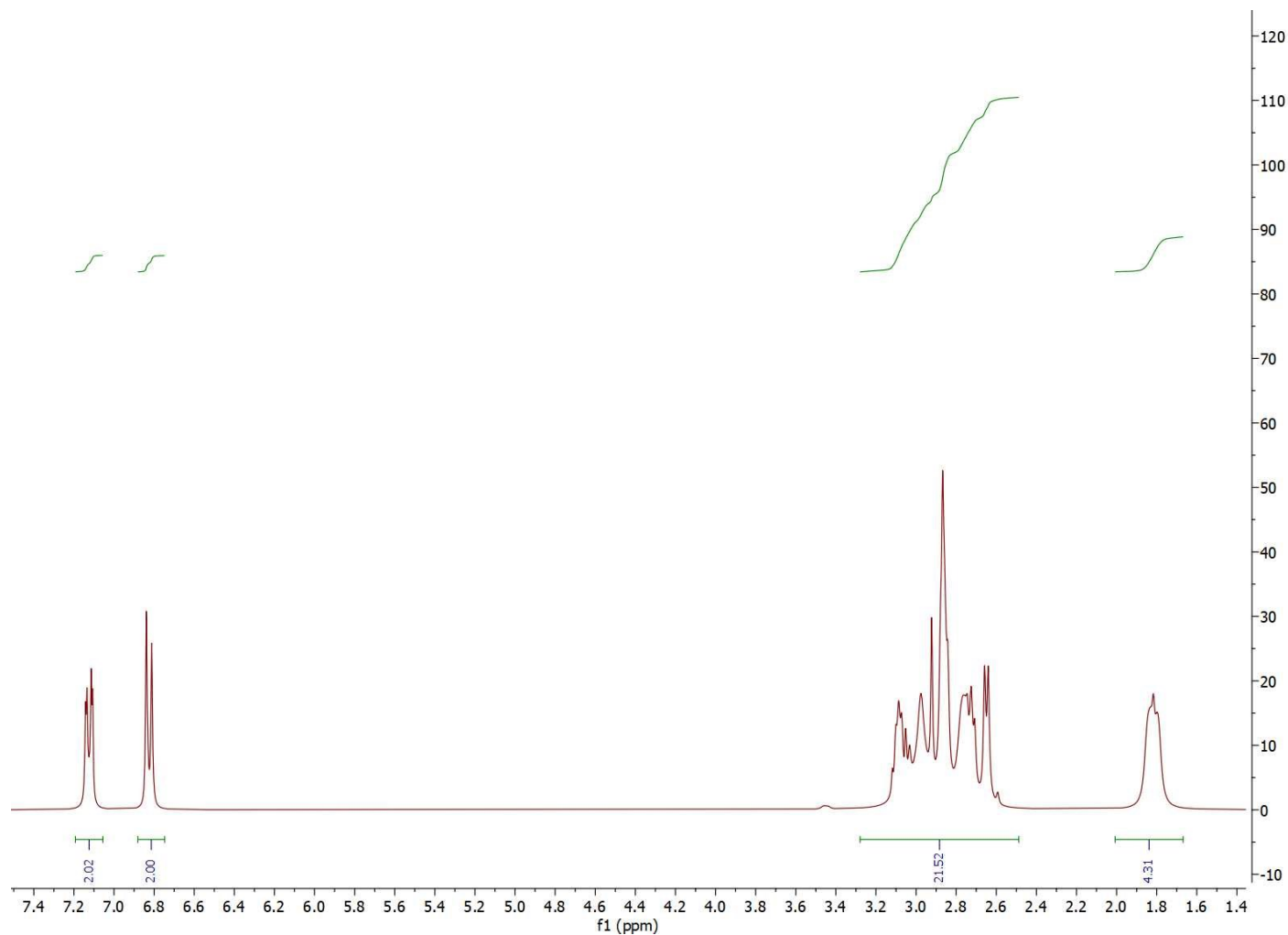
^1H NMR (300 MHz, D_2O) δ :

7,12 (d, $J = 8,2$ Hz, 2H, C3b, C5b),

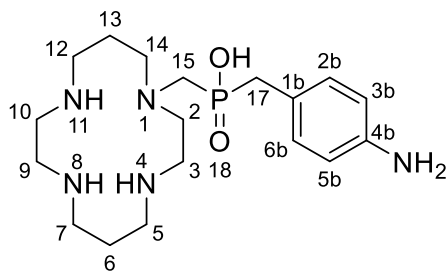
6,83 (d, $J = 8,2$ Hz, 2H, C2b, C6b),

3,53 – 2,48 (m, 22H, C2 – C14, C15),

1,96 – 1,63 (m, 5H, N4, N8, N11, C17).

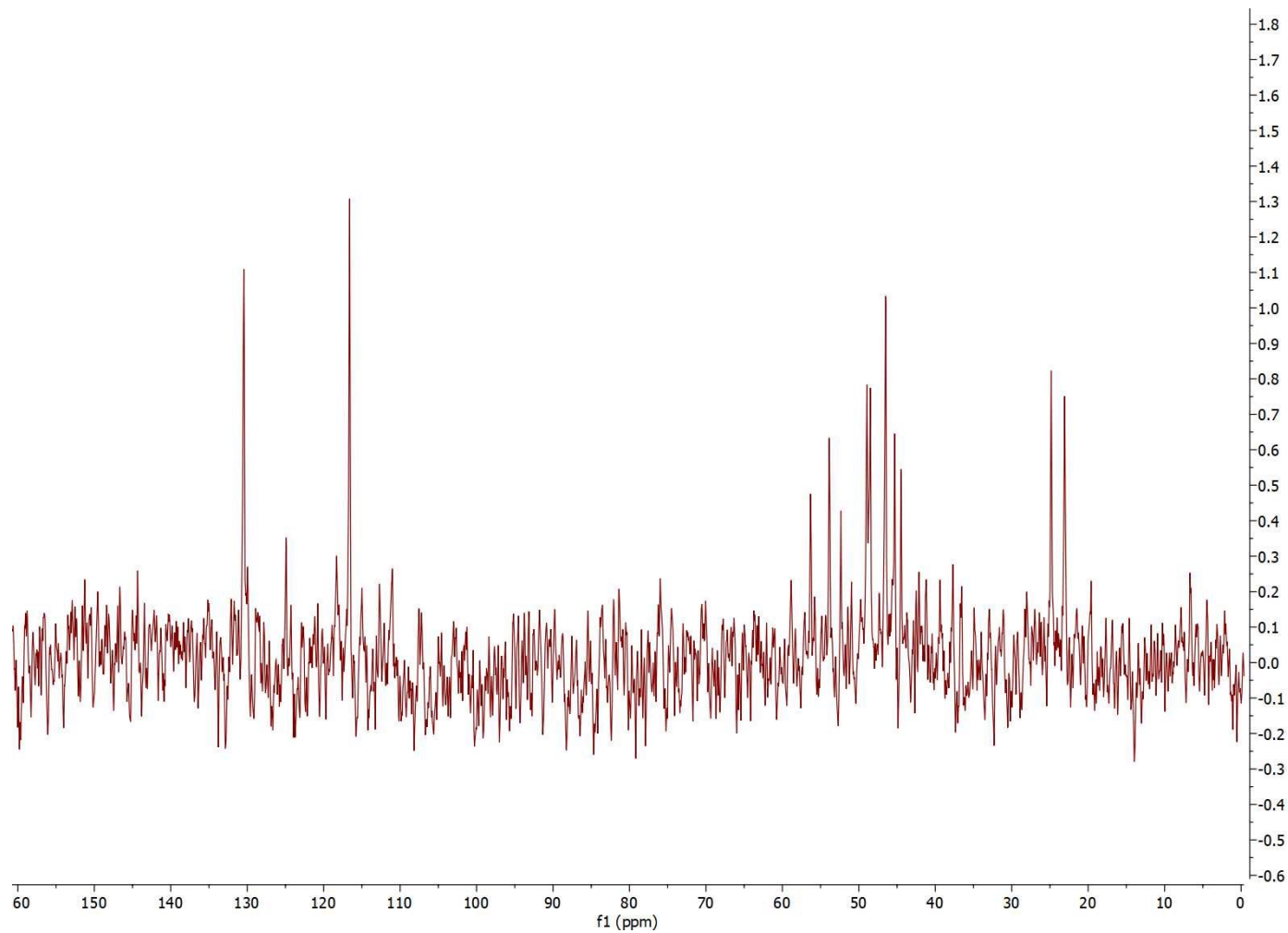


Príloha 7 – ^{13}C NMR spektrum ((1,4,8,11-tetraazacyklotetradekan-1-yl)metyl)(4-aminobenzyl)fosfínovej kyseliny

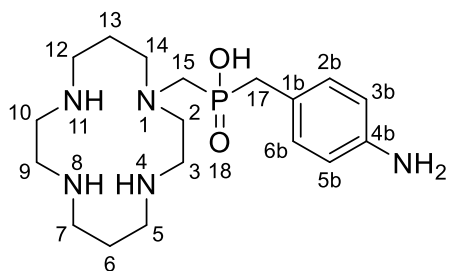


^{13}C NMR (101 MHz, D₂O) δ :

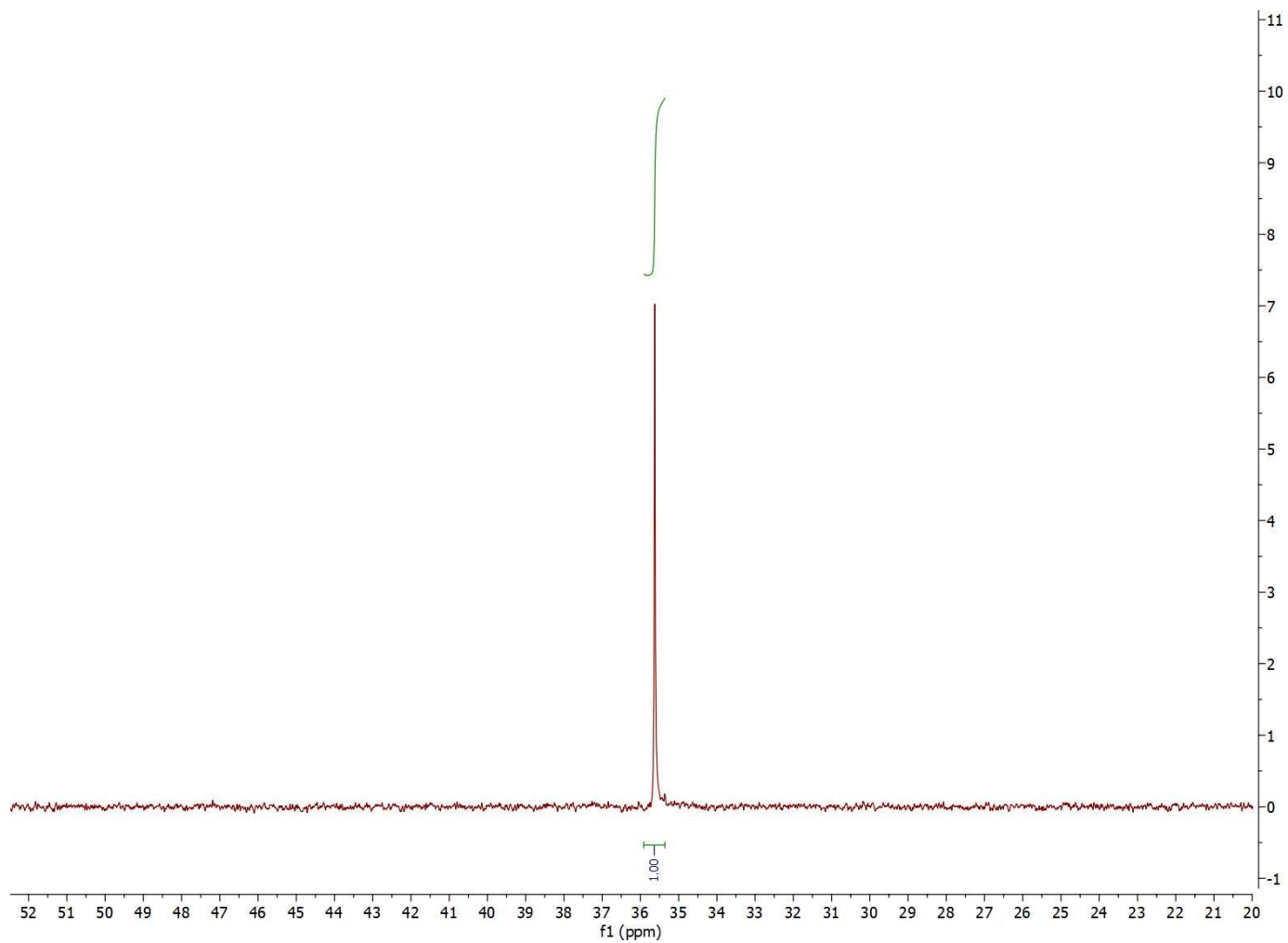
144,32 (C5b), 130,36 (C2b, C6b),
124,92 (C1b), 116,68 (C3b, C5b),
56,21 (C14), 53,87 (C2, C15), 48,86
(C12), 48,46 (C3), 46,42 (C5, C7,
C17), 45,15 (C9), 44,50 (C10), 24,84
(C13), 22,81 (C6).



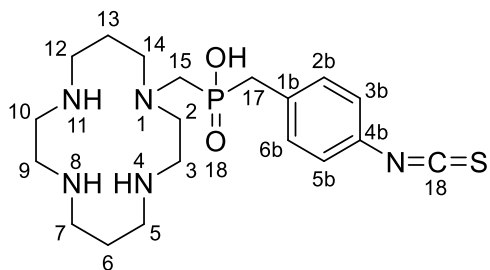
Príloha 8 – ^{31}P NMR spektrum ((1,4,8,11-tetraazacyklotetradekan-1-yl)metyl)(4-aminobenzyl)fosfínovej kyseliny



^{31}P NMR (121 MHz, D_2O) δ : 35,69.



Príloha 9 – ^1H NMR spektrum ((1,4,8,11-tetraazacyklotetradekan-1-yl)metyl)(4-isothiokyanato-benzyl)fosfínovej kyseliny



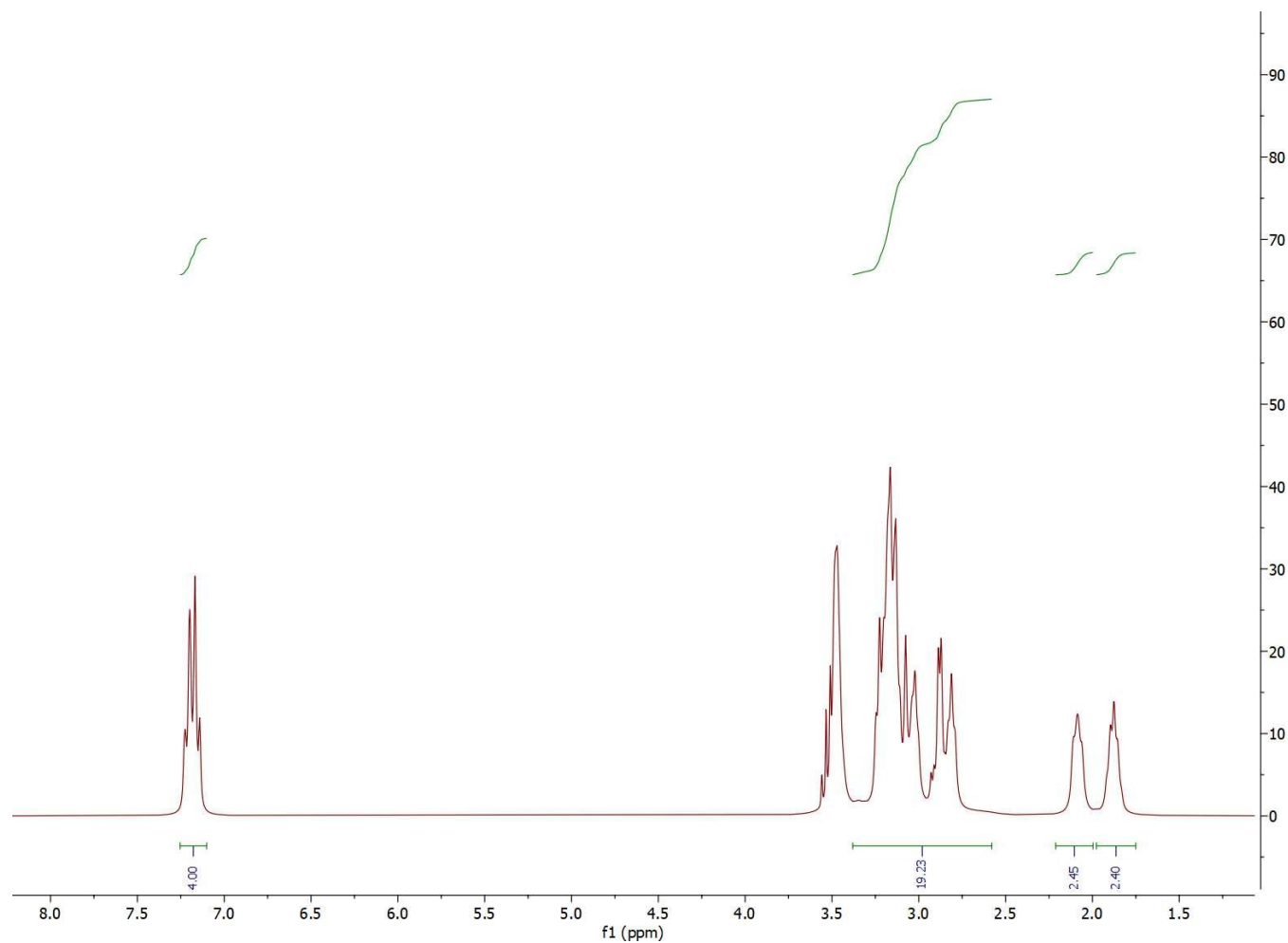
^1H NMR (300 MHz, D_2O) δ :

7,18 (q, $J = 7,18$ Hz, 4H, C2b – C6b),

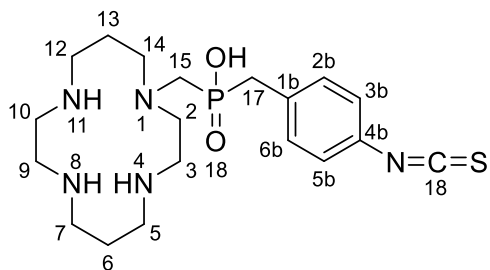
3,37 – 2,58 (m, 20H, C2 – C14),

2,22 – 2,00 (m, 3H, N4, N8, N11), 1,97

– 1,75 (m, 3H, C15, C17a).

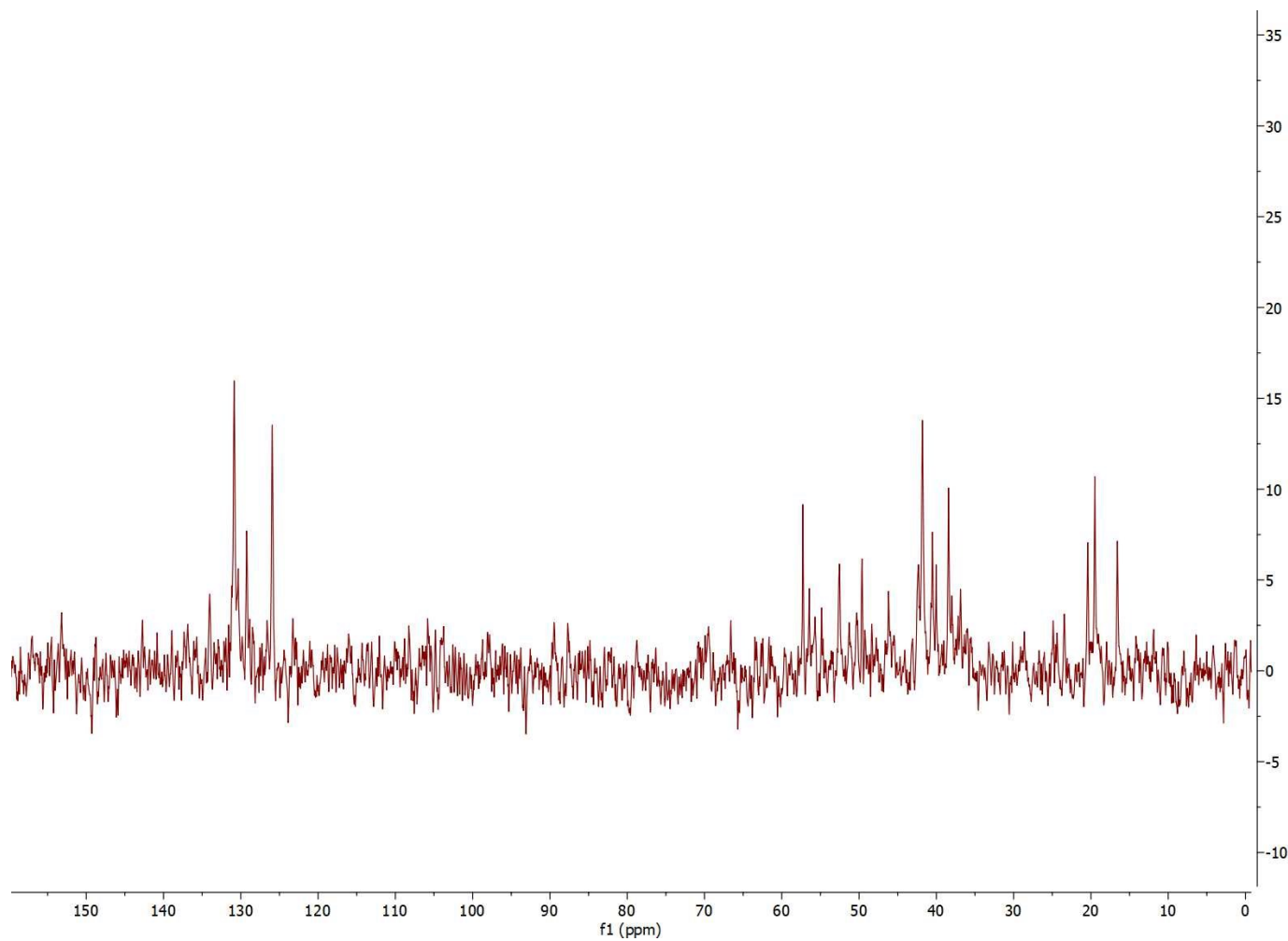


Príloha 10 – ^{13}C NMR spektrum ((1,4,8,11-tetraazacyklotetradekan-1-yl)metyl)(4-isothiokyanato-benzyl)fosfínovej kyseliny

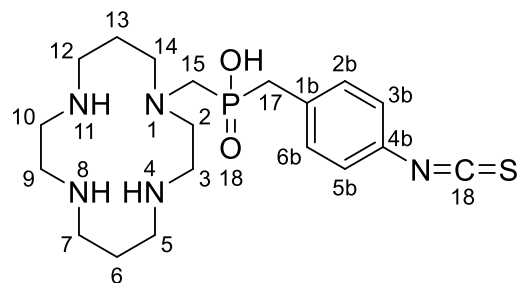


^{13}C NMR (101 MHz, D₂O) δ :

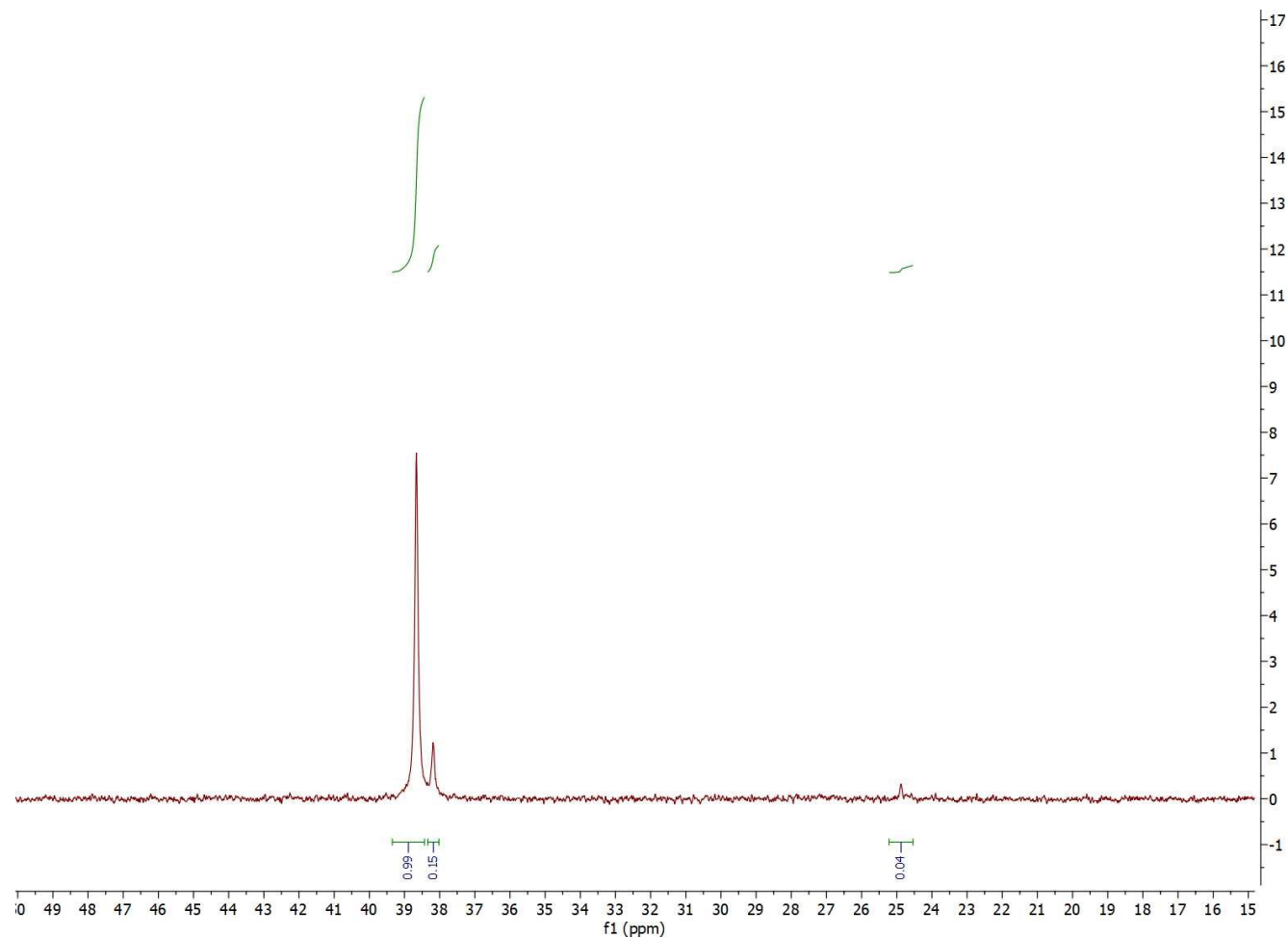
134,23 (C4b), 130,74 (C2b, C6b),
129,27 (C1b), 126,13 (C3b, C5b),
56,39 (C14), 52,56 (C2), 49,55 (C15),
46,11 (C12), 42,32 (C3), 41,82
(C5, C7), 40,52 (C17), 40,01 (C9),
38,43 (C10), 20,35 (C13), 19,57 (C6).



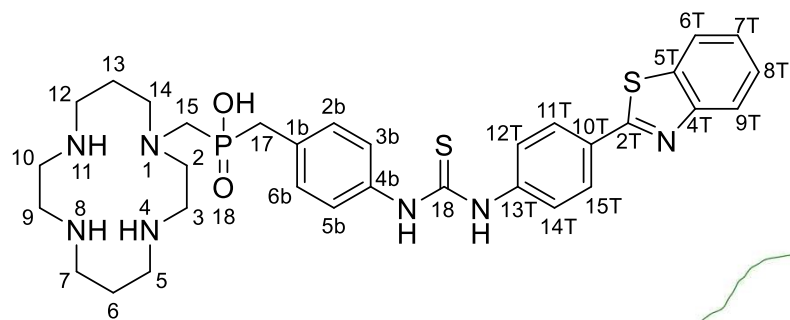
Príloha 11 – ^{31}P NMR spektrum ((1,4,8,11-tetraazacyklotetradekan-1-yl)metyl)(4-isothiokyanato-benzyl)fosfinovej kyseliny



^{31}P NMR (121 MHz, D_2O) δ : 38,68, 38,22, 24,81 (^{31}P NMR žiadaného produktu je 38,68).



Príloha 12 – ^1H NMR spektrum ligandu L2

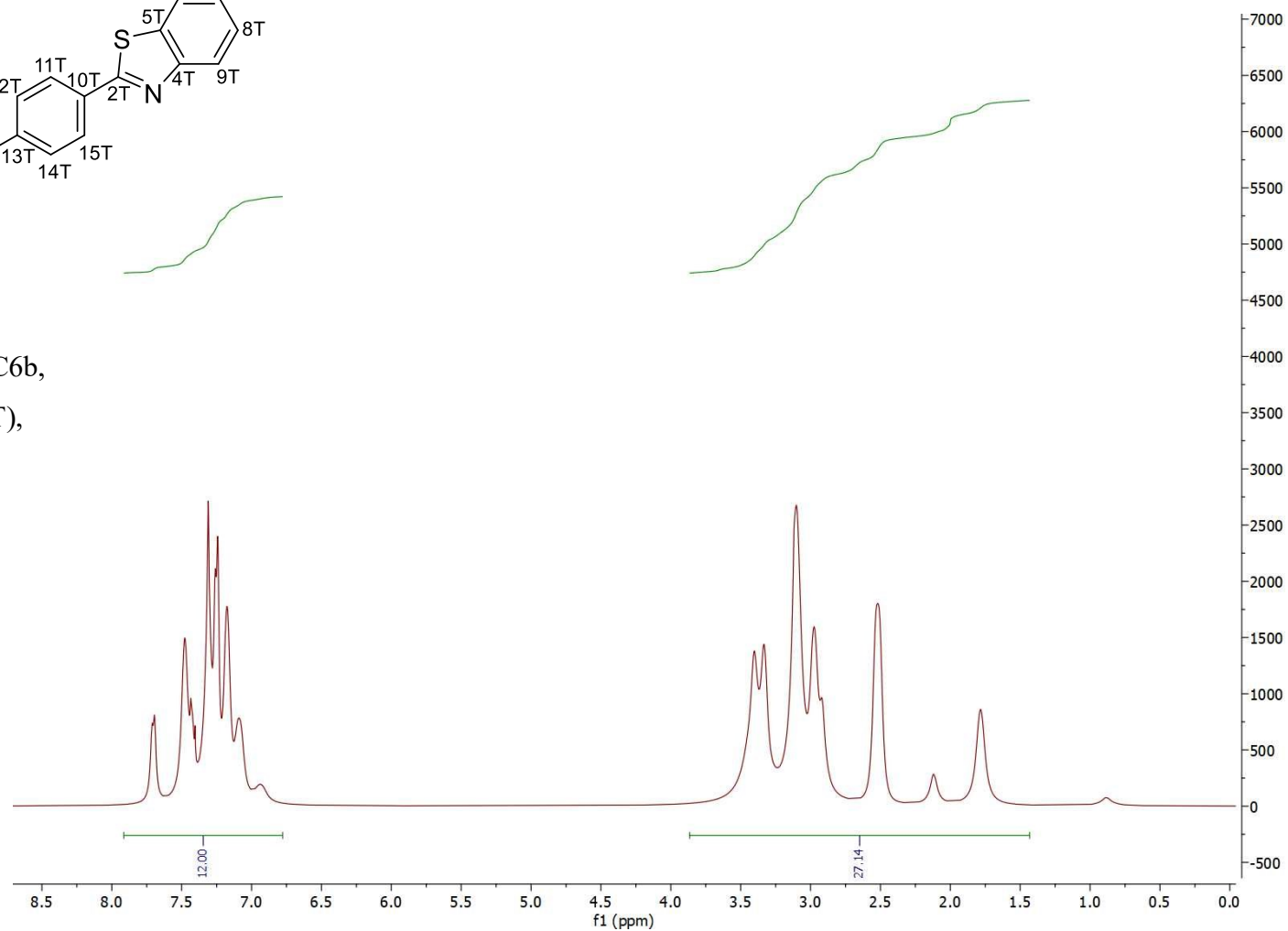


^1H NMR (400 MHz, D_2O) δ :

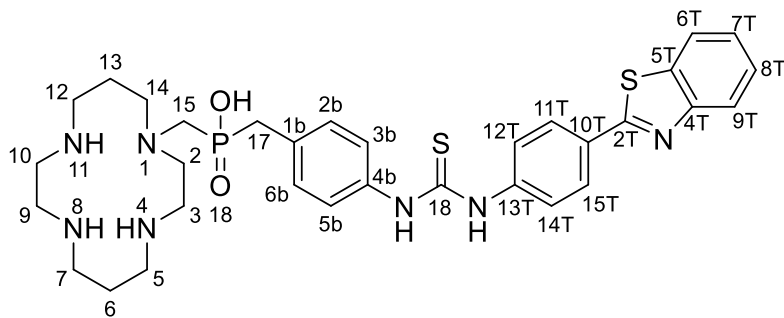
7,92 – 6,77 (m, 12H, C2b, C3b, C5b, C6b,

C6T – C9T, C11T, C12T, C14T, C15T),

3,86 – 1,44 (m, 27H, C2 – C17).

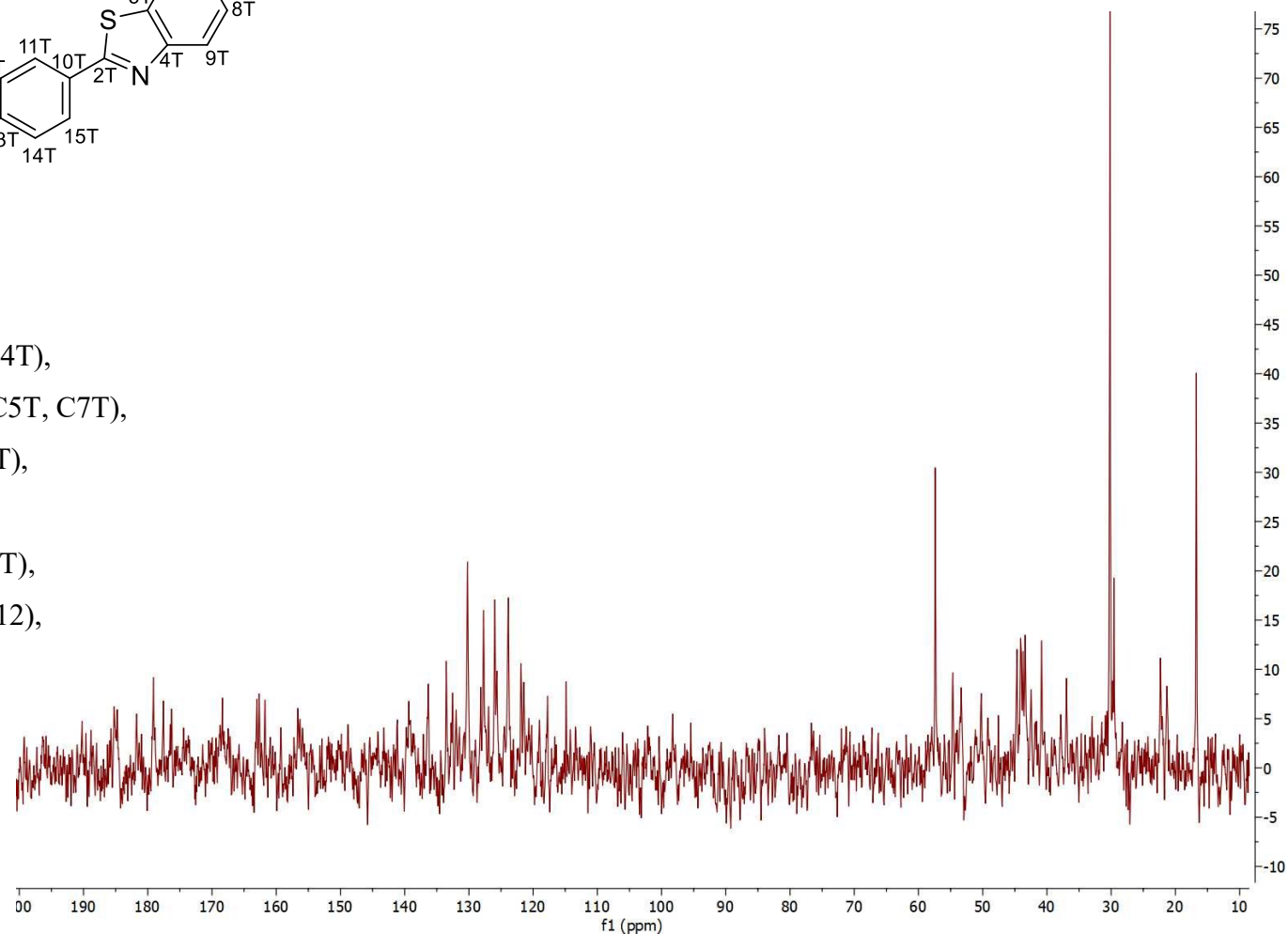


Príloha 13 – ^{13}C NMR spektrum ligandu L2

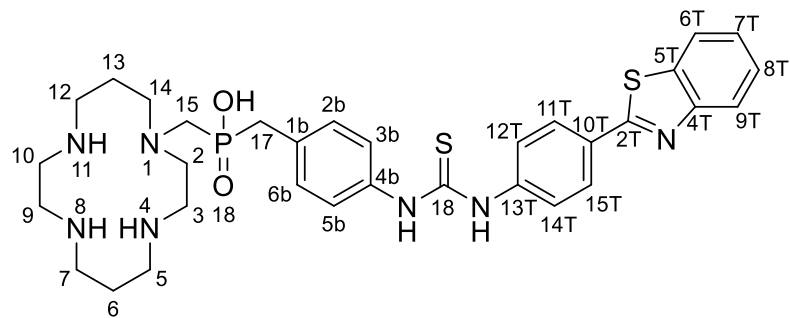


^{13}C NMR (101 MHz, D_2O) δ :

179,06 (C18), 162, 93 (C2T), 156,32 (C4T),
139,44 (C13T), 133,58 (C4b), 130,11 (C5T, C7T),
127,72 (C2b, C6b), 126,08 (C11T, C15T),
125,58 (C8T), 123,87 (C3b, C5b),
121,86 (C12T, C14T), 115,05 (C6T, C9T),
57,16 (C2, C14), 54,64 (C15), 50,20 (C12),
44,65 (C3), 44,02 (C5), 43,63 (C7),
43,32 (C17), 40,83 (C9, C10),
22,13 (C13), 21,44 (C6).



Príloha 14 – ^{31}P NMR spektrum ligandu L2



^{31}P NMR (121 MHz, D_2O) δ : 36,11.

