SUPPLEMENTARY MATERIAL TO

**Hindered phenolic aminothiazoles – Synthesis, α-glucosidase, α-amylase inhibitory and antioxidant activities**

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Analytical and Spectral data of the synthesised compounds

*4-Amino-5-(3,5-di-t-butyl-4-hydroxybenzoyl)-2-phenylaminothiazole*(***5a***). Method A: Yield 360 mg (85 %); Method B: Yield 390 mg (93 %). yellow crystals m.p.: 135-136 C. IR (KBr, cm-1): 3739m, 3617m, 3433m, 2958m, 1700s, 1532s, 1428s, 1308m, 1238s, 1109m, 759w, 683w. 1H NMR (400 MHz, CDCl3, δ): 8.78 (*s*, 1H, NH), 7.66 (*s*, 2H, ArH), 7.36 (*d*, 4H, *J* = 5.6 Hz, ArH), 7.13-7.16 (*m*, 1H, ArH), 5.51 (*s*, 1H, ArOH), 1.43 (*s*, 18H, Me). 13C NMR (100 MHz, CDCl3, *δ*): 185.5 (C=O), 168.9 (thiazole C), 164.1 (thiazole C), 156.4 (C-OH), 138.7 (Ar-C), 135.6 (Ar-C), 132.5 (Ar-C), 129.6 (Ar-C), 125.0 (Ar-C), 124.9 (Ar-C), 120.1 (Ar-C), 34.5 (t-Bu), 30.2 (t-Bu). (+)ESI-HRMS (*m/z)*: calculated for [C24H29N3O2S + H]+ 424.20587, observed 424.20619. Combustion analysis for C24H29N3O2S: Calculated. C 68.05, H 6.90, N 9.02; found C 68.21, H 6.65, N 9.19.

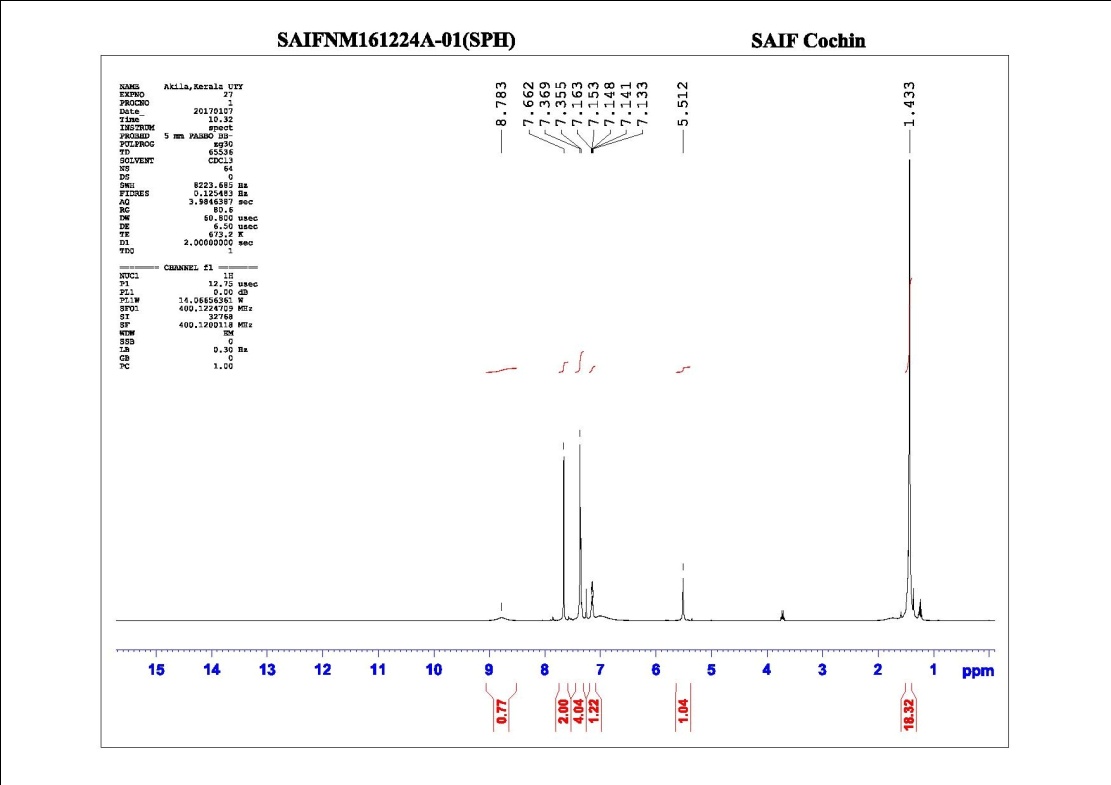
*4-Amino-5-(3,5-di-t-butyl-4-hydroxybenzoyl)-2-(4-methoxyphenylamino)thiazole* (***5b***).Method A: Yield 281 mg (62 %); Method B: Yield 326 mg (72 %). orange crystals m.p.: 130-132 C. IR (KBr, cm-1): 3738m, 3615m, 3432w, 2924m, 1743m, 1520s, 1463s, 1304m, 1242s, 1110m, 1026m, 832w, 763w. 1H NMR (400 MHz, CDCl3, δ): 7.62 (*s*, 2H, ArH), 7.30 (*d*, 2H, *J* = 8.8 Hz, ArH), 6.89 (*d*, 2H, *J* = 8.8 Hz, ArH), 5.49 (*s*, 1H, ArOH), 3.81 (*s*, 3H, -OMe), 1.45 (*s*, 18H, Me). 13C NMR (100 MHz, CDCl3, *δ*): 185.3 (C=O), 170.6 (thiazole C), 164.4 (thiazole C), 157.5 (C-OH), 156.3 (C-OCH3), 135.5 (Ar-C), 132.6 (Ar-C), 131.5 (Ar-C), 124.9 (Ar-C), 123.4 (Ar-C), 114.8 (Ar-C), 55.6 (CH3), 34.5 (t-Bu), 30.2 (t-Bu). FABMS (Thioglycerol matrix) (*m/z)*: calculated for [C25H31N3O3S]+ 453.20, observed 453.74. Combustion analysis for C25H31N3O3S: Calculated. C 66.20, H 6.89, N 9.26; found C 66.32, H 7.04, N 9.18.

*4-Amino-5-(3,5-di-t-butyl-4-hydroxybenzoyl)-2-(4-chlorophenylamino)thiazole*(***5c***). Method A: Yield 288 mg (59 %); Method B: Yield 366 mg (80 %). yellowish orange crystals m.p.: 131-133C. IR (KBr, cm-1): 3611w, 3345w, 2925m, 1741m, 1542s, 1488s, 1211s, 1099m, 1019m, 825w. 1H NMR (400 MHz, CDCl3, δ): 8.72 (*s*, 1H, NH), 7.65 (*s*, 2H, ArH), 7.35 (*d*, 2H, *J* = 8.8 Hz, ArH), 7.27 (*d*, 2H, *J* = 4.8 Hz, ArH), 5.52 (*s*, 1H, ArOH), 3.72 (*q*, 2H, *J* = 8.75 Hz, -CH2, solvent of crystallisation), 1.42 (*s*, 18H, Me), 1.24 (*t*, 3H, *J* = 8.75, -CH3, solvent of crystallisation). 13C NMR spectrum (100 MHz, CDCl3, δ): 185.6 (C=O), 168.2 (thiazole C), 164.2 (thiazole C), 156.5 (C-OH), 137.4 (Ar-C), 135.7 (Ar-C), 132.4 (Ar-C), 129.5 (Ar-C), 129.4 (Ar-C), 125.0 (Ar-C), 121.0 (Ar-C), 58.5 (-CH2, solvent of crystallisation), 34.5 (t-Bu), 30.2 (t-Bu), 18.4 (-CH3, solvent of crystallisation). FABMS (Thioglycerol matrix) (*m/z)*: calculated for [C24H28ClN3O2S]+ 457.16, observed 457.16.Combustion analysisfor C24H28ClN3O2S: Calculated. C 62.94, H 6.16, N 9.17; found C 62.71, H 5.92, N 9.03.

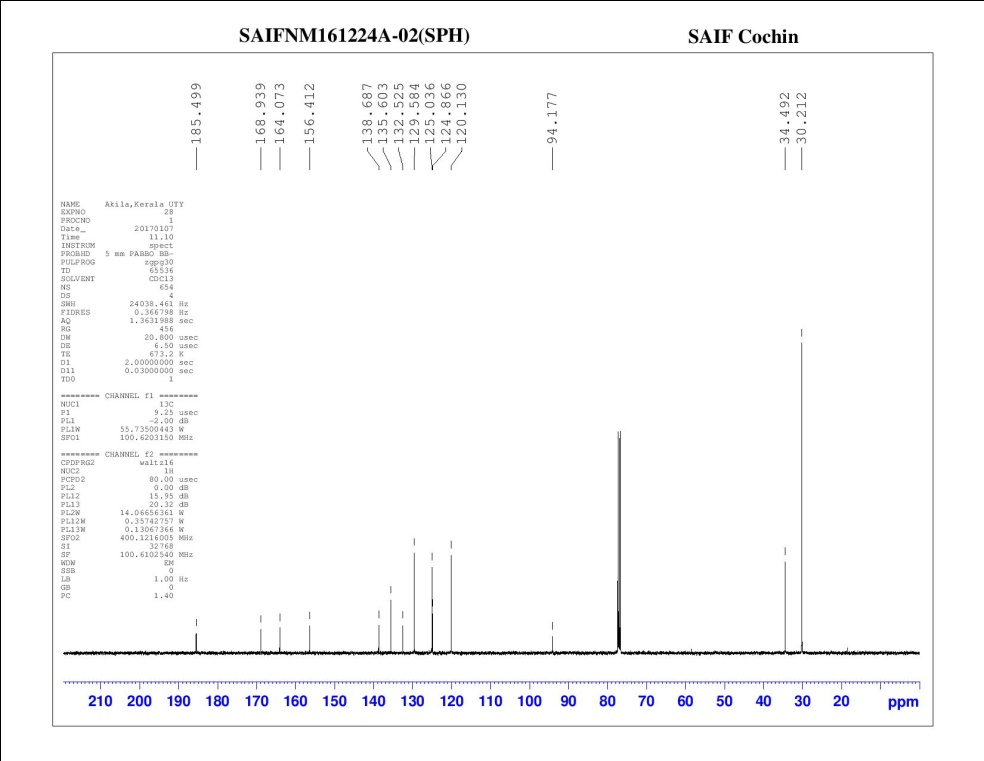
*4-Amino-5-(3,5-di-t-butyl-4-hydroxybenzoyl)-2-(4-methylphenylamino)thiazole**(****5d****).*Method A: Yield 232 mg (53 %); Method B: Yield 263 mg (60 %). yellow crystals m.p.: 123-125C. IR (KBr, cm-1): 3619m, 3288m, 2959s, 2871s, 1745m, 1562s, 1514s, 1433s, 1363s, 1237s, 1202s, 1159s, 1117s, 930w, 888m, 814m, 774m, 616w. 1H NMR (400 MHz, CDCl3, δ): 7.66 (*s*, 2H, ArH), 7.25 (*d*, 2H, *J* = 8.8 Hz, ArH), 7.17 (*d*, 2H, *J* = 8.4 Hz, ArH), 5.50 (*s*, 1H, ArOH), 3.72 (*q*, 2H, *J* = 9.5 Hz, -CH2, solvent of crystallisation), 2.34 (*s*, 3H, Me), 1.45 (*s*, 18H, Me), 1.24 (*t*, 3H, *J* = 9.5 Hz, -CH3, solvent of crystallisation). 13C NMR (100 MHz, CDCl3, δ): 185.4 (C=O), 169.3 (thiazole C), 164.1 (thiazole C), 156.4 (C-OH), 135.9 (Ar-C), 135.6 (Ar-C), 135.0 (Ar-C), 132.6 (Ar-C), 130.1 (Ar-C), 124.9 (Ar-C), 120.5 (Ar-C), 58.5 (-CH2, solvent of crystallisation), 34.5 (t-Bu), 30.2 (t-Bu), 20.9 (-CH3), 18.4 (-CH3, solvent of crystallisation). (+)ESI-HRMS (*m/z)*: calculated for [C25H31N3O2S + H]+ 438.22152, observed 438.22227. Combustion analysisfor C25H31N3O2S: Calculated. C 68.62, H 7.14, N 9.60; found C 68.70, H 6.99, N 9.46.

*4-Amino-5-(3,5-di-t-butyl-4-hydroxybenzoyl)-2-(4-ethoxyphenylamino)thiazole* (***5e***). Method A: Yield 248 mg (53 %); Method B: Yield 304 mg (65 %). yellow crystals m.p.: 123-125C. IR (KBr, cm-1): 3619m, 3282w, 2959m, 1730m, 1514s, 1305m, 1239s, 1168m, 1111m, 1064m, 892w, 830w, 768w. 1HNMR (500 MHz, CDCl3, δ): 8.11 (*s*, 1H, NH), 7.63 (*s*, 2H, ArH), 7.28-7.26 (*m*, 2H, ArH), 6.90-6.88 (m, 2H, ArH), 5.49 (*s*, 1H, ArOH), 4.03 (*q*, 2H, *J* = 7 Hz, -OCH2), 1.66 (*s*, 18H, Me), 1.42 (*t*, 3H, *J1* = 7.5 Hz, Me). 13C NMR (125 MHz, CDCl3, δ): 185.3 (C=O), 170.7 (thiazole C), 164.4 (thiazole C), 156.9 (C-OH), 156.3 (C-OC2H5), 135.5 (Ar-C), 132.6 (Ar-C), 131.2 (Ar-C), 124.9 (Ar-C), 123.5 (Ar-C), 115.3 (Ar-C), 63.8 (-OCH2), 34.5 (t-Bu), 30.2 (t-Bu), 14.8 (-CH3). FABMS (Thioglycerol matrix) (*m/z)*: calculated for [C26H33N3O3S + H]+ 468.23, observed 469.00. Combustion analysisfor C26H33N3O3S: Calculated. C 66.78, H 7.11, N 8.99; found C 66.63, H 6.89, N 8.91.

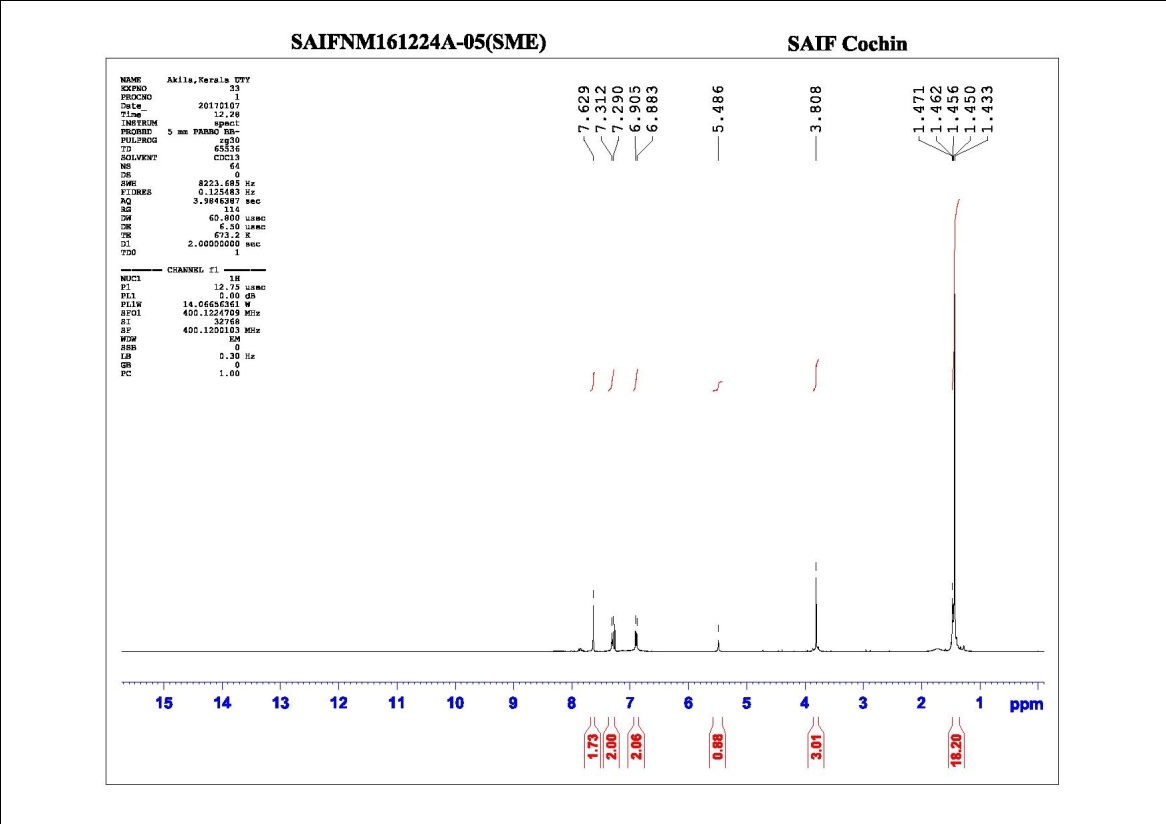
Spectra of compounds **5a-e**

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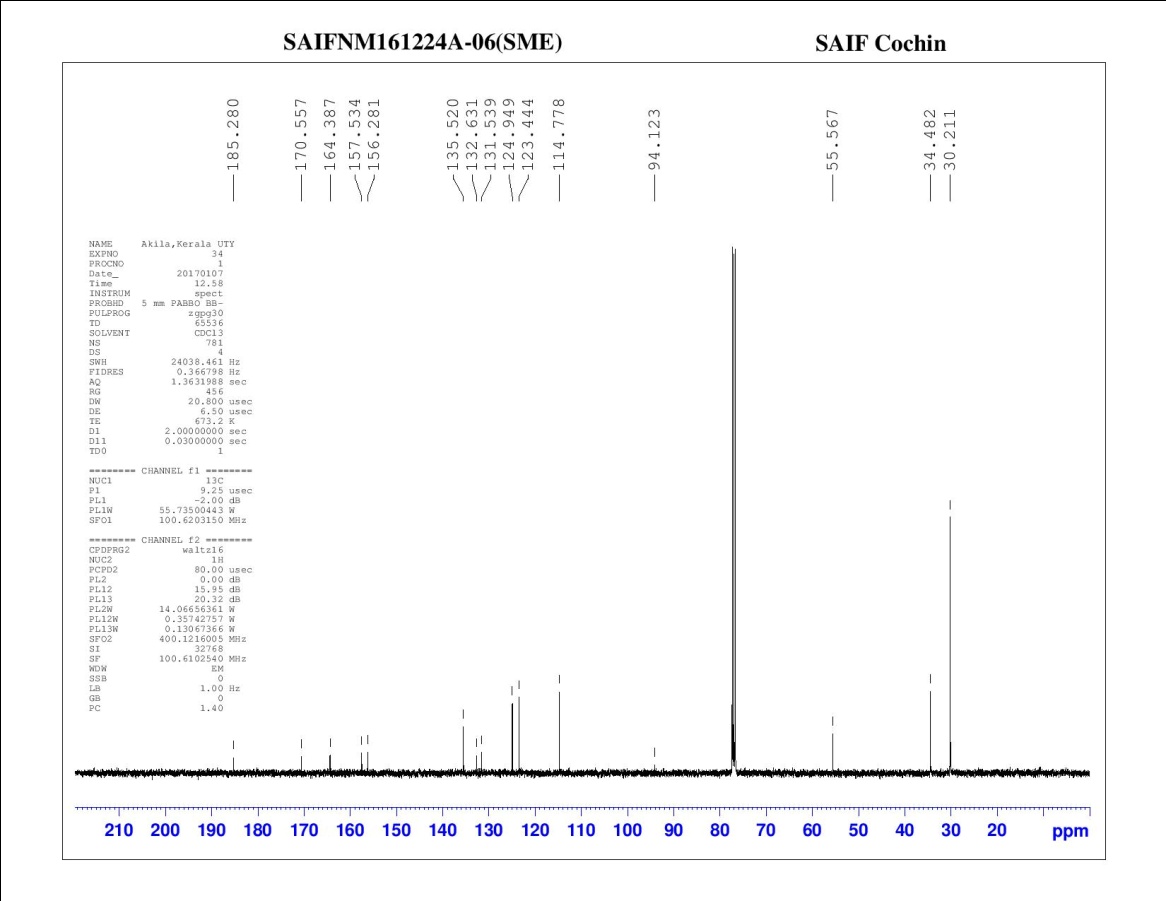
**Figure I**: 1H NMR spectrum (400 MHz, CDCl3)of *4-Amino-5-(3,5-di-t-butyl-4-hydroxybenzoyl)-2-phenylaminothiazole* (***5a***)



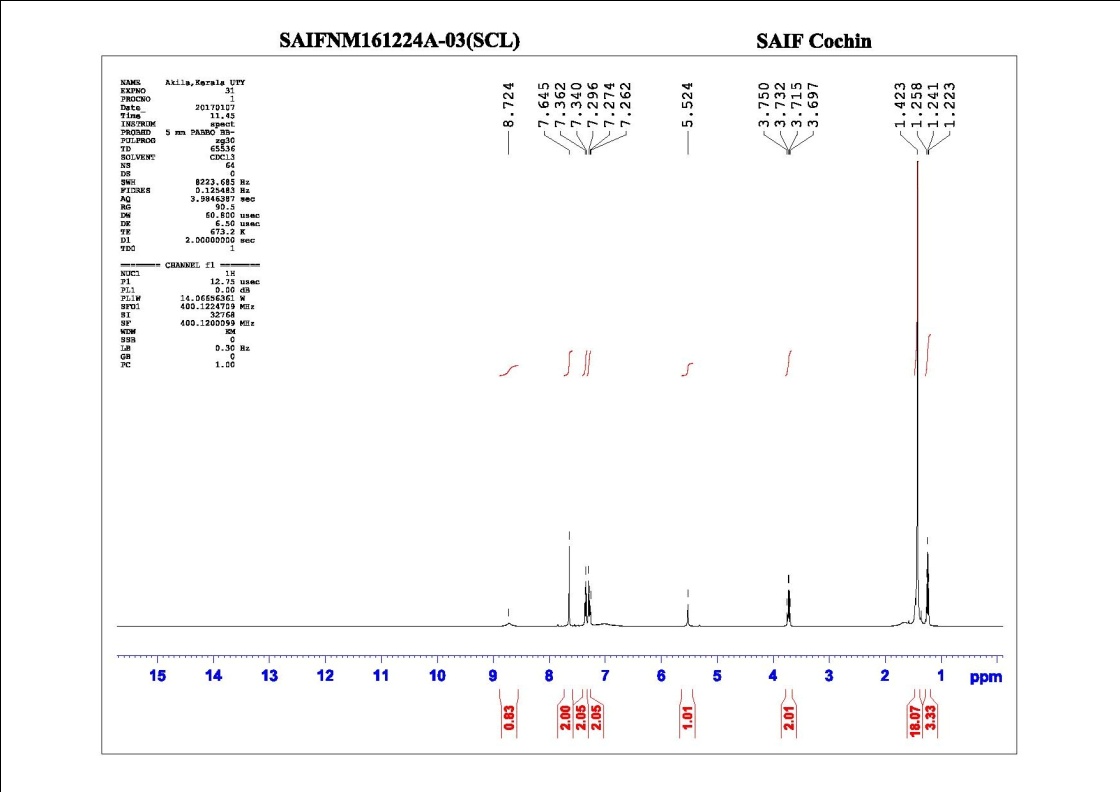
**Figure II**: 13C NMR spectrum (100 MHz, CDCl3) of *4-Amino-5-(3,5-di-t-butyl-4-hydroxybenzoyl)-2-phenylaminothiazole* (***5a***)



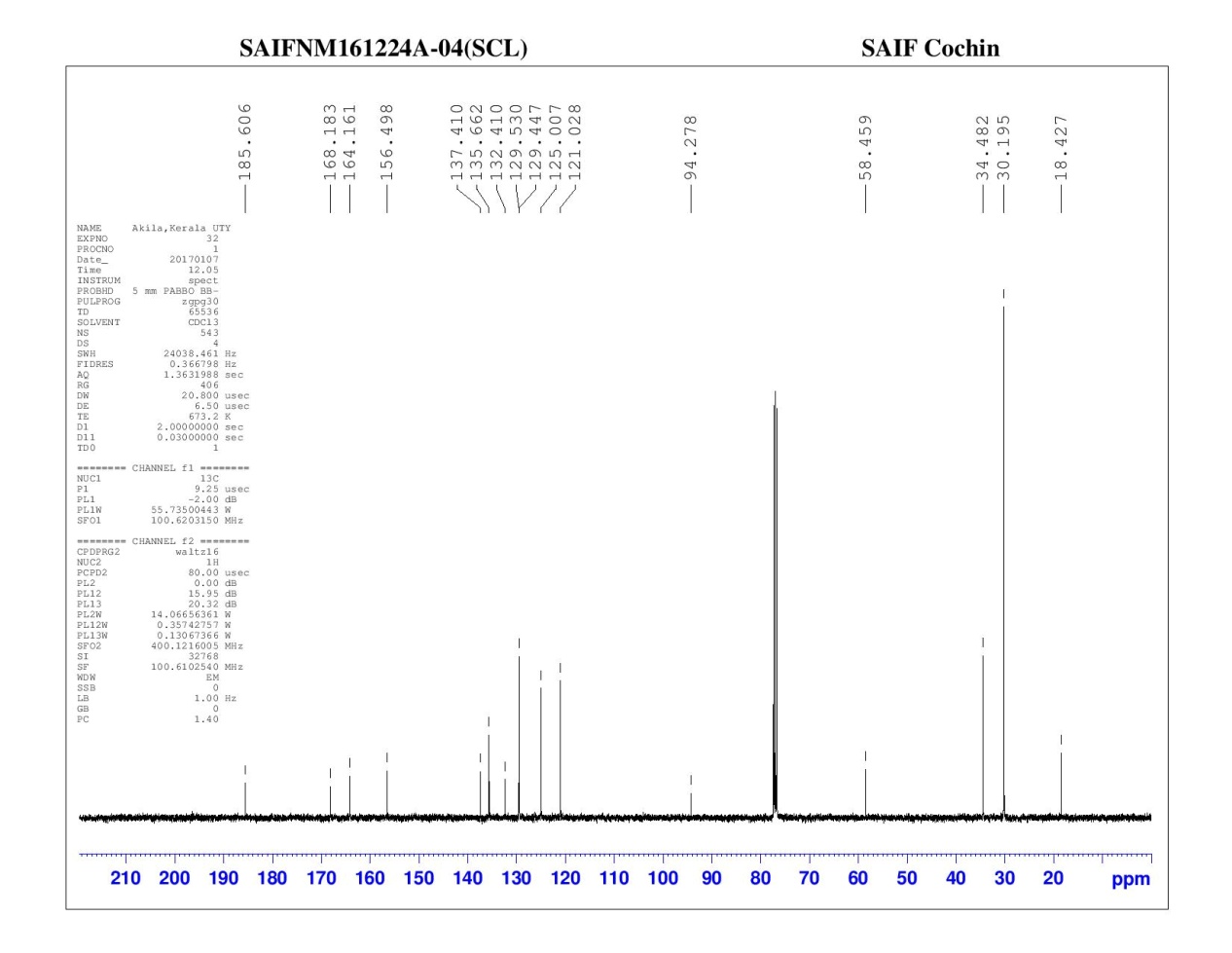
**Figure III**: 1H NMR spectrum (400 MHz, CDCl3) of *4-Amino-5-(3,5-di-t-butyl-4-hydroxybenzoyl)-2-(4-methoxyphenylamino)thiazole* (***5b***)



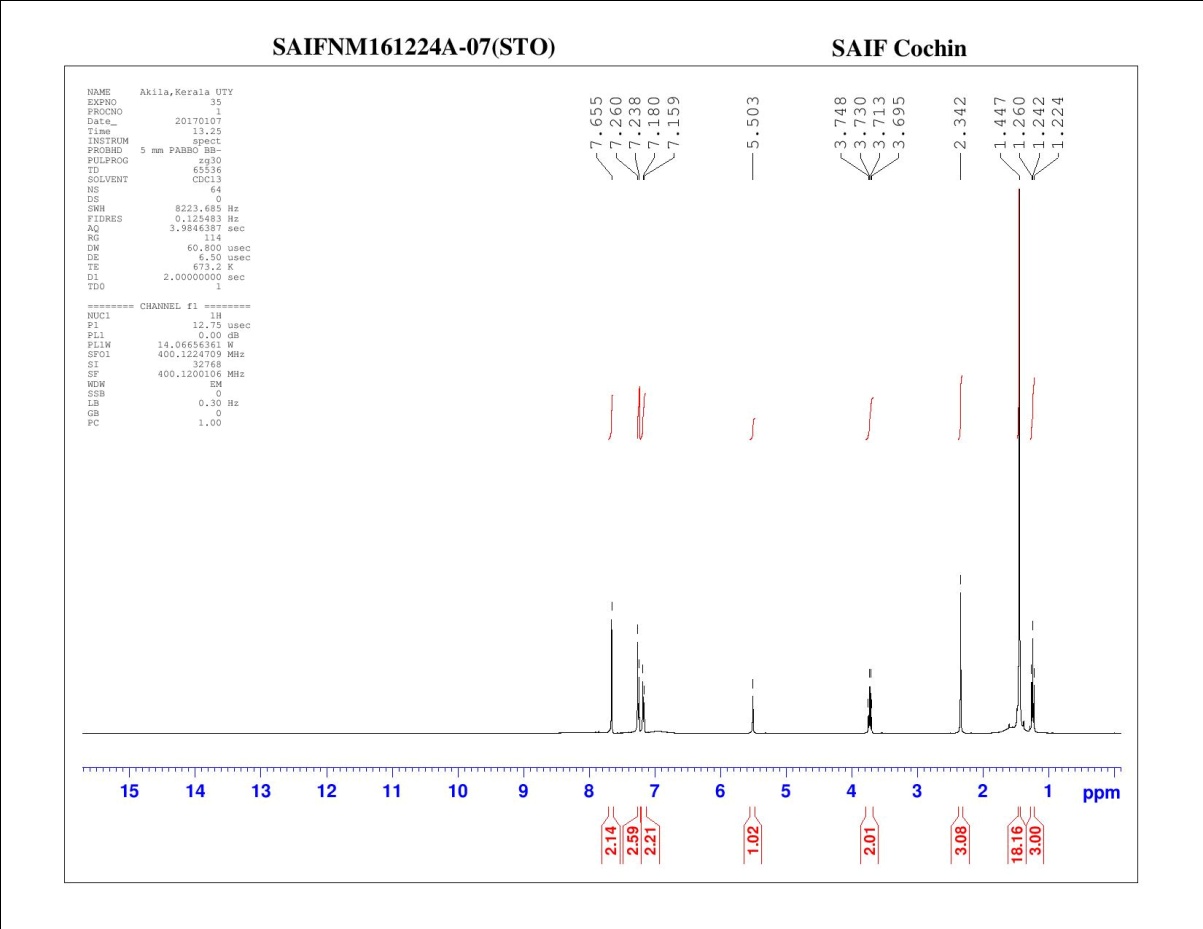
**Figure IV**: 13C NMR spectrum (100 MHz, CDCl3) of *4-Amino-5-(3,5-di-t-butyl-4-hydroxybenzoyl)-2-(4-methoxyphenylamino)thiazole* (***5b***)

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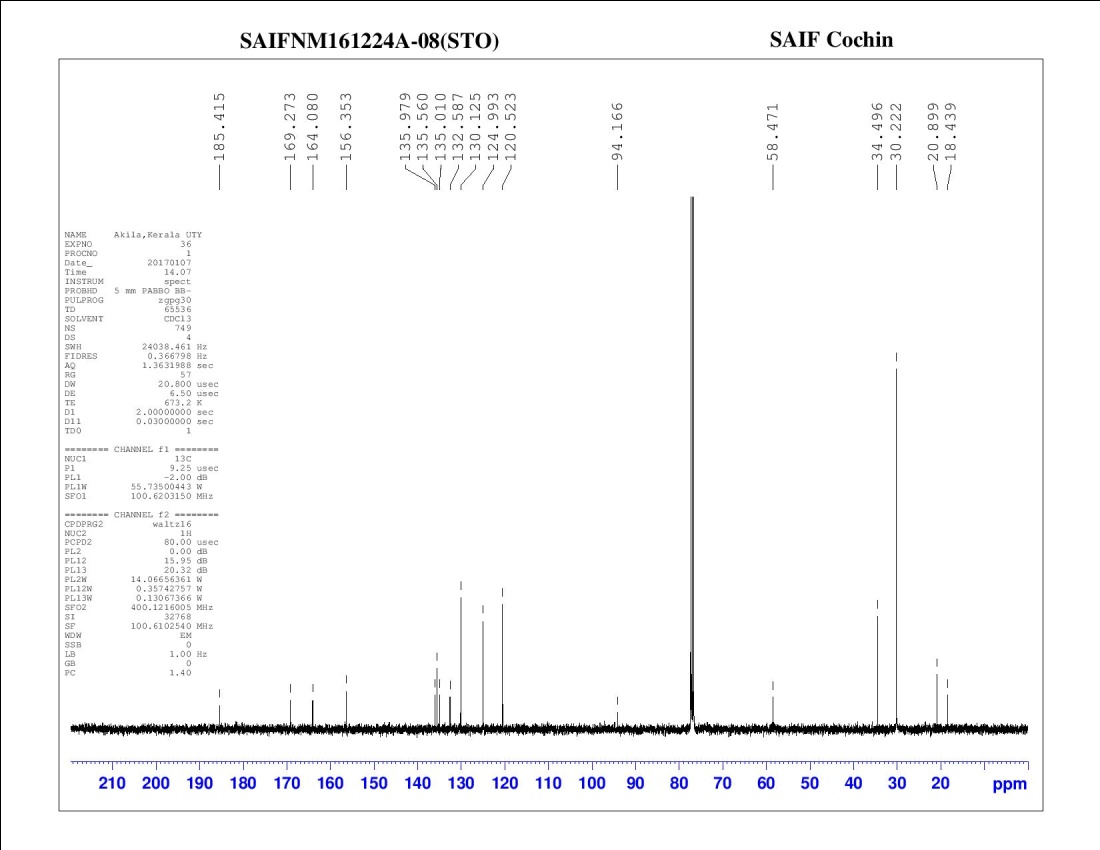
**Figure V**: 1H NMR spectrum (400 MHz, CDCl3) of *4-Amino-5-(3,5-di-t-butyl-4-hydroxybenzoyl)-2-(4-chlorophenylamino)thiazole* (***5c***)



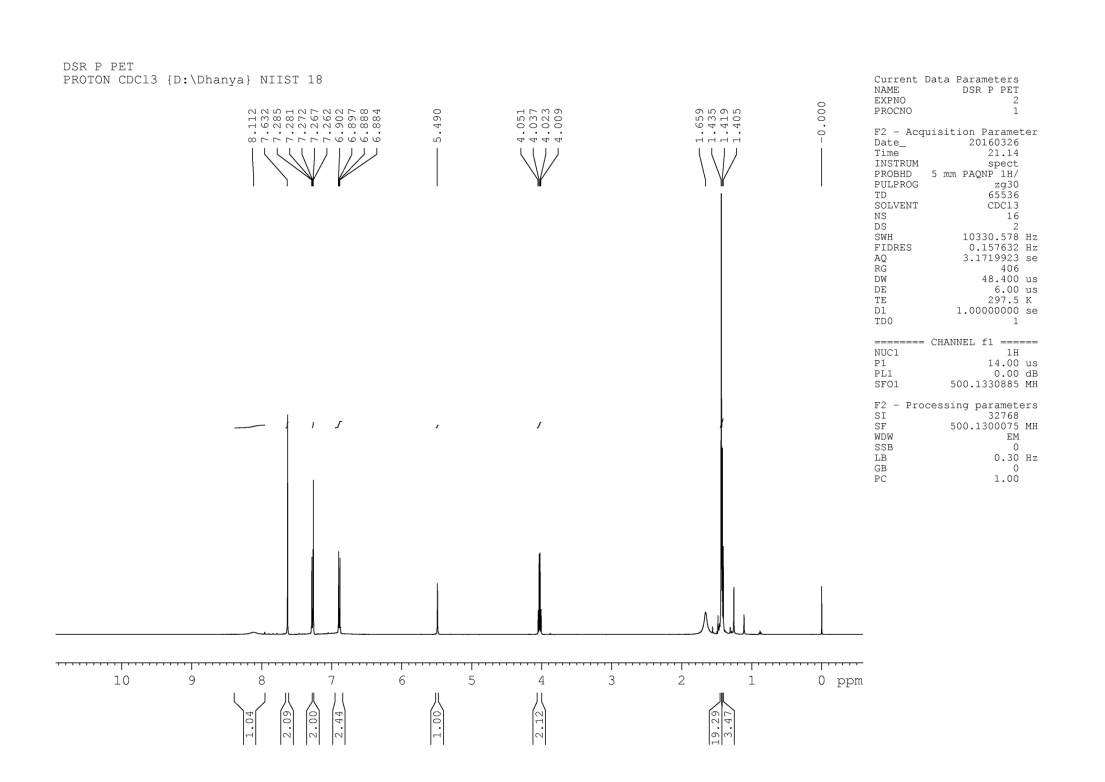
**Figure VI**: 13C NMR spectrum (100 MHz, CDCl3) of *4-Amino-5-(3,5-di-t-butyl-4-hydroxybenzoyl)-2-(4-chlorophenylamino)thiazole* (***5c***)



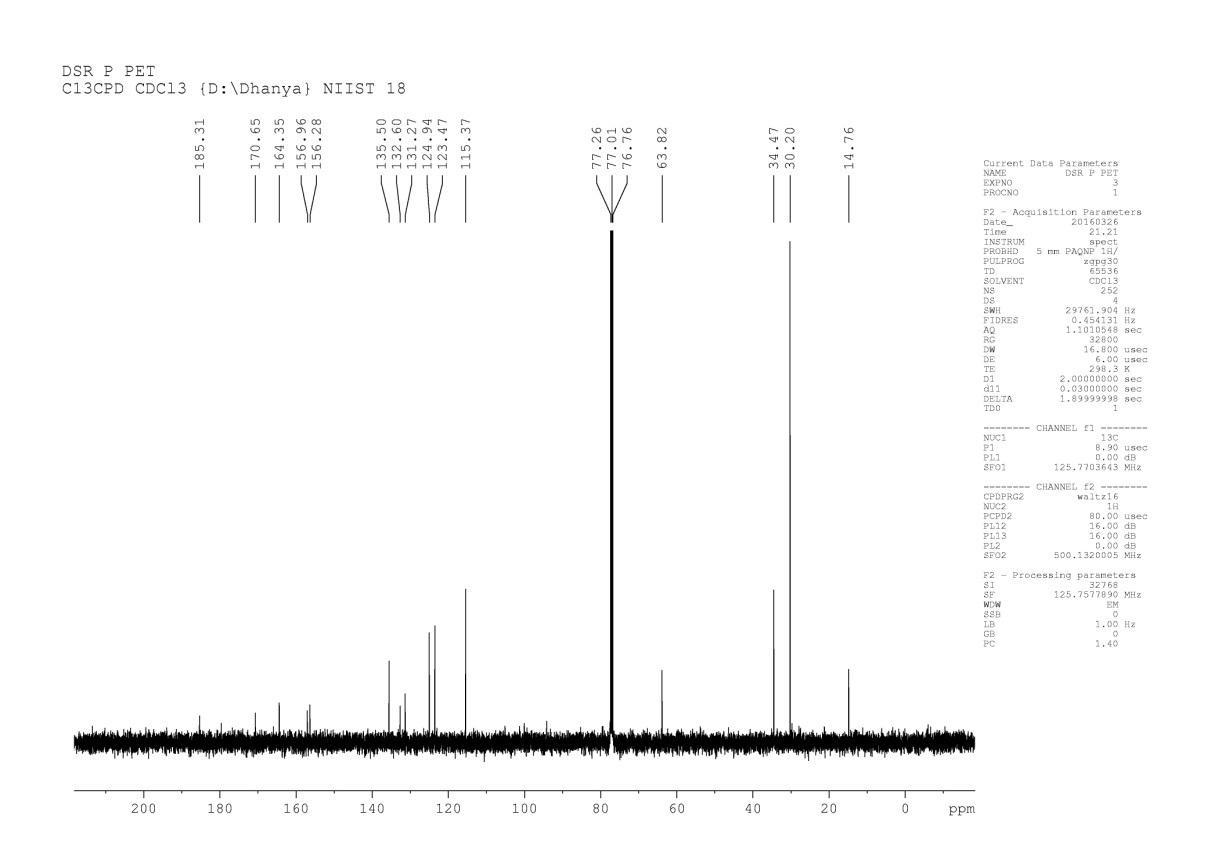
**Figure VII**: 1H NMR spectrum (400 MHz, CDCl3) of *4-Amino-5-(3,5-di-t-butyl-4-hydroxybenzoyl)-2-(4-methylphenylamino)thiazole* (***5d***)



**Figure VIII**: 13C NMR spectrum (100 MHz, CDCl3) of *4-Amino-5-(3,5-di-t-butyl-4-hydroxybenzoyl)-2-(4-methylphenylamino)thiazole* (***5d***)



**Figure IX**: 1H NMR spectrum (500 MHz, CDCl3) of *4-Amino-5-(3,5-di-t-butyl-4-hydroxybenzoyl)-2-(4-ethoxyphenylamino)thiazole* (***5e***)



**Figure X**: 13C NMR spectrum (125 MHz, CDCl3) of *4-Amino-5-(3,5-di-t-butyl-4-hydroxybenzoyl)-2-(4-ethoxyphenylamino)thiazole* (***5e***)