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SUPPLEMENTARY MATERIAL TO

Synthesis of novel *N*-substituted benzyl *N*-(1,3-benzothiazol-2-yl) acetamides and their *in vitro* antibacterial activities

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N-[2-Methylphenyl)methylidene]-6-methyl-1,3-benzothiazol-2-amine ***(3a)***. Yield: 70%. M.p. 132-133°. FT-IR: 3042, 1610, 1597, 1530, 1505 (Fig.S1). ^{1}H NMR(500 MHz, DMSO-d$_6$, δ) : 2.45 (s, 3H, CH$_3$-Benzothiazole), 2.65 (s, 3H, Ar-CH$_3$), 7.34 (dd, 1H, $^{4}J_{12,14}$=1.28 Hz, $J_{11,13}$=8.23 Hz, H12), 7.38 (d, 1H, $J_{14,15}$=7.81 Hz, H15), 7.39 (t, 1H, $J_{12,14}$=8.93 Hz, H13), 7.53 (dt, 1H, $^{4}J_{\text{H14-H12}}$=1.31 Hz, $J_{13,15}$=7.42 Hz, H14), 7.83 (s, 1H, H7), 7.84 (d, 1H, $J_{5,4}$=8.44 Hz, H5), 8.12 (d, 1H, $J_{4,5}$=7.81 Hz, H4), 9.34 (s, 1H, -CH=N-) (Fig.S2) (The numbering of protons of the compound is given in Scheme 1). ^{13}C NMR(125 MHz, DMSO-d$_6$, δ): 19.07, 21.24, 117.88, 118.67, 121.28, 125.83, 126.45, 126.88, 127.04, 128.68, 130.90, 131.15, 136.48, 138.58, 150.54, 164.16. Anal. Calcd for $C_{16}H_{14}N_2S$: C 72.15, H 5.30, N 10.52, S 12.04 %; found: C 72.00, H 5.35, N 10.54, S 11,96 %.

N-[2-Methoxyphenyl)methylidene]-6-methyl-1,3-benzothiazol-2-amine ***(3b)***. Yield: 76%. M.p. 134-136°. FT-IR: 3045, 1615, 1595, 1551 (Fig.S3). ^{1}H NMR(500 MHz, DMSO-d$_6$, δ) : 2.46 (s, 3H, CH$_3$-Benzothiazole), 3.96(s, 3H, Ar-OCH$_3$), 7.14 (t, 1H, $J_{15,14}$=7.51 Hz, H14), 7.24 (d, 1H, $J_{13,12}$=8.41 Hz, H12), 7.35 (dd, 1H, $^{4}J_{5,7}$=1.34 Hz, $J_{4,5}$=8.31 Hz, H5), 7.66 (dt, 1H, $^{4}J_{13,15}$=1.75 Hz, $J_{12,14}$=7.24 Hz, H13), 7.83 (d, 1H, $J_{4,5}$=8.30 Hz, H4), 7.85 (s, 1H, H7), 8.11 (dd, 1H, $^{4}J_{15,13}$=1.65 Hz, $J_{15,14}$=7.76 Hz, H15), 9.30 (s, 1H, -CH=N-)(Fig.S4 and fig. S5). ^{13}C NMR (125 MHz, DMSO-d$_6$, δ): 21.21, 56.53, 112.93, 121.50, 122.35, 122.71, 122.77, 128.03, 128.56, 134.62, 135.43, 136.11, 149.86, 161.08, 161.73, 171.33. ESI-MS m/z= Calculated for ($C_{16}H_{14}N_2SO + H^+$) 283.1, observed 283.18 (Fig.S8). Anal. Calcd for $C_{16}H_{14}N_2SO$: C 68.06, H 5.00, N 9.92, S 11.36 %. Found: C 68.20, H 5.20, N 9.98, S 11.35 %.

N-[2-hyroxyphenyl)methylidene]-6-methyl-1,3-benzothiazol-2-amine ***(3c)***. Yield: 90%. M.p. 137-138°. FT-IR: 3360, 3040, 1620, 1583, 1570, 1545 (Fig.S9).

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^{1}H NMR(500 MHz, DMSO-d_6, δ): 2.44 (s, 3H, CH_3-Benzothiazole); 7.01(d, 1H, $J_{15,13}$=7.48 Hz H14), 7.04 (d, 1H, $J_{13,12}$=8.14 Hz, H12), 7.34 (d, 1H, $J_{5,4}$=8.43 Hz, H4), 7.52 (dt, 1H, $^{4}J_{13,15}$=1.27 Hz, $J_{12,14}$=8.40 Hz, H13), 7.83 (d, 1H, $J_{4,5}$=8.20 Hz, H5), 7.86 (s, 1H, H7), 7.93 (dd, 1H, $^{4}J_{15,13}$=1.21 Hz, $J_{15,14}$=7.80 Hz, H15), 9.45 (s, 1H, -CH=N-), 11.5 (s, 1H, PhOH)(Fig.S10 and S11). ^{13}C NMR(125 MHz, DMSO-d_6, δ): 21.58, 117.41, 120.06, 120.31, 122.40, 122.70, 128.61, 131.66, 134.47, 135.62, 135.98, 149.73, 160.98, 166.04, 169.73 (Fig.S12). Anal. Calcd. for $C_{15}H_{12}N_2OS$: C 67.14, H 4.51, N 10.44, S 11.95 %. Found: C 67.10, H 4.56, N 10.49, S 11,40 %.

N-[4-hydroxyphenyl)methylidene]-6-methyl-1,3-benzothiazol-2-amine ***(3d)***. Yield: 72%. M.p. 136-138°. FT-IR: 3350, 3044, 1618, 1585, 1572, 1543. ^{1}H NMR(500 MHz, DMSO-d_6, δ): 2.40 (s, 3H, CH_3-Benzothiazole), 6.96 (d, 2H, $J_{11,13}$=8.55 Hz, H12 and H14), 7.30 (d, 1H, $J_{5,4}$=8.11 Hz, H4), 7.77 (d, 1H, $J_{4,5}$=8.45 Hz, H5), 7.79 (s, 1H, H7), 7.94 (d, 2H, $J_{12,14}$=8.56 Hz, H11 and H15), 9.02 (s, 1H, -CH=N-), 10.5 (s, 1H, Ar-OH)(Fig.S13). ^{13}C NMR(125 MHz, DMSO-d_6, δ): 21.54, 116.63, 122.27, 122.36, 126.37, 128.34, 133.08, 134.36, 135.07, 149.92, 163.24, 166.49, 171.41(Fig.S14). Anal. Calcd. for $C_{15}H_{12}N_2OS$: C 67.14, H 4.51, N 10.44, S 11.95 %. Found: C 67.02, H 4.54, N 10.40, S 11,45 %.

N-(2-methylbenzyl)-6-Methyl-1,3-benzothiazol-2-amine ***(4a)***. Yield: 87%. M.p. 102-103°. FT-IR: 3412, 1605, 1594, 1571. ^{1}H NMR(500 MHz, DMSO-d_6, δ): 2.32 (s, 3H, CH_3-Benzothiazole), 2.34 (s, 3H, Ar-CH_3), 4.55 (d, 2H, $J_{CH2\text{-}NH}$=5.44 Hz, Ar-$\underline{CH_2}$NH-), 7.03 (dd, 1H, $^{4}J_{5,7}$=1.31 Hz, $J_{4,5}$=8.15 Hz, H5), 7.18 (m, 3H, H12, H-14 and H15), 7.27 (d, 1H, $J_{5,4}$=8.11 Hz, H4), 7.32 (d, 1H, $J_{12,14}$=7.29 Hz, H13), 7.47 (s, 1H, H7), 8.25 (t, 1H, $J_{NH\text{-}CH2}$=5.43 Hz, $\underline{NH}CH_2$-Ar)(Fig.S15). ^{13}C NMR(125 MHz, DMSO-d_6, δ): 19.12, 21.22, 45.92, 118.20, 121.35, 126.27, 126.99, 127.61, 128.28, 130.51, 130.98, 136.43, 137.05, 150.81, 165.78 (Fig.S16). ESI-MS m/z= Calculated for ($C_{16}H_{16}N_2S + H^+$) 269.1, observed 269.1 (Fig.S19). Anal. Calcd for $C_{16}H_{16}N_2S$: C 71.60, H 6.01, N 10.44, S 11.95 %. Found: C 71.52, H 6.03, N 10.50, S 11.90 %.

N-(2-methoxybenzyl)-6-Methyl-1,3-benzothiazol-2-amine ***(4b)***. Yield: 90%. M.p. 125-127°. FT-IR: 3430, 1608, 1567(Fig.S20). ^{1}H NMR(500 MHz, DMSO-d_6, δ): 2.31 (s, 3H, CH_3-Benzothiazole), 3.83 (s, 3H, Ar-OCH_3), 4.53 (d, 2H, $J_{CH2\text{-}NH}$=5.67 Hz, Ar-$\underline{CH_2}$NH-), 6.92 (t, 1H, $J_{15,13}$=7.28 Hz, H14), 7.02 (d, 2H, $J_{12,13}$=$J_{4,5}$=8.09 Hz, H12 and H4), 7.25 (d, 2H, $J_{4,5}$ $J_{12,14}$=7.03 Hz, H5 and H15), 7.29 (t, 1H, $J_{12,14}$=7.13 Hz H13), 7.46 (s, 1H, H7); 8.22 (t, 1H, $J_{NH\text{-}CH2}$=5.67 Hz, $\underline{NH}CH_2$-Ar) (Fig.S21 and S22). ^{13}C NMR(125 MHz, DMSO-d_6, δ): 21.22, 42.89, 55.82, 111.06, 118.18, 120.62, 121.32, 126.79, 126.96, 128.46, 128.81, 130.44, 130.97, 150.83, 157.32, 166.00 (Fig.S23). ESI-MS m/z= Calculated for ($C_{16}H_{16}N_2SO + H^+$) 285.1, observed 285.1. Anal. Calcd for $C_{16}H_{16}N_2SO$: C 67.58, H 5.67, N 9.85, S 11.28 %. Found: C 67.28, H 4.58, N 9.86, S 10.40 %.

N-(2-hyroxybenzyl)-6-Methyl-1,3-benzothiazol-2-amine ***(4c)***. Yield: 90%. M.p. 170-172°. FT-IR: 3525, 3409, 1595, 1570(Fig.S28). ^{1}H NMR(500 MHz, DMSO-d$_6$, δ): 2.32 (s, 3H, CH$_3$-Benzothiazole), 4.47 (d, 2H, $J_{CH2\text{-}NH}$=5.796 Hz, Ar-CH$_2$NH-), 6.74 (dt, 1H, $^{4}J_{14,12}$=0.79 Hz $J_{15,13}$=7.41 Hz, H14), 6.86 (dd, 1H, $^{4}J_{12,14}$=0.65 Hz, $J_{13,12}$=7.64 Hz, H12), 7.06 (dd, 1H, $^{4}J_{15,13}$=1.36 Hz, $J_{14,15}$=8.24 Hz, H15), 7.10 (dt, 1H, $^{4}J_{13,15}$=1.61 Hz, $J_{12,14}$=7.69 Hz, H13), 7.24 (dd, 1H, $^{4}J_{5,7}$=1.16 Hz, $J_{4,5}$=7.53 Hz, H5), 7.26 (d, 1H, $J_{5,4}$=8.11 Hz, H4), 7.47 (s, 1H, $^{4}J_{7,5}$=0.97 Hz, H7), 8.30 (t, 1H, J=5.70 Hz, NHCH$_2$-Ar), 9.75 (br. s, 1H, Ar-OH) (Fig.S29). ^{13}C NMR(125 MHz, DMSO-d$_6$, δ): 21.22, 43.14, 115.85, 118.00, 119.37, 121.41, 125.34, 127.04, 128.69, 129.36, 130.55, 130.81, 150.45, 155.61, 166.29. Anal. Calcd. for C$_{15}$H$_{14}$N$_2$OS: C 66.64, H 5.22, N 10.36, S 11.86 %. Found: C 66.60, H 5.21, N 10.33, S 11.84 %.

N-(4-hyroxybenzyl)-6-Methyl-1,3-benzothiazol-2-amine ***(4d)***. Yield: 93%. M.p. 168-170°. FT-IR: 3542, 3430, 1591, 1556. ^{1}H NMR(500 MHz, DMSO-d$_6$, δ): 2.46 (s, 3H CH$_3$-Benzothiazole), 4.49 (d, 2H, $J_{CH2\text{-}NH}$=5.20 Hz, Ar-CH$_2$NH-), 6.74 (d, 2H, $J_{11,13}$=8.43 Hz, H12 and H14), 7.02 (d, 1H, $J_{4,5}$=7.16 Hz, H5), 7.2 (d, 2H, $J_{12,14}$=8.41 Hz, H11 and H15), 7.24 (d, 1H, $J_{5,4}$=6.84 Hz, H4), 8.28 (t, 1H, $J_{NH\text{-}CH2}$=5.44 Hz, NHCH$_2$-Ar), 9.30 (br. s, 1H, Ar-OH) (Fig.S30 and S31). ^{13}C NMR(125 MHz, DMSO-d$_6$, δ): 21.22, 47.39, 115.54, 118.15, 121.32, 16.98, 129.34, 129.49, 130.42, 130.92, 150.86, 156.95, 165.91 (Fig.S32). Anal. Calcd. for C$_{15}$H$_{14}$N$_2$OS: C 66.64, H 5.22, N 10.36, S 11.86 %. Found: C 66.61, H 5.18, N 10.31, S 11.82 %.

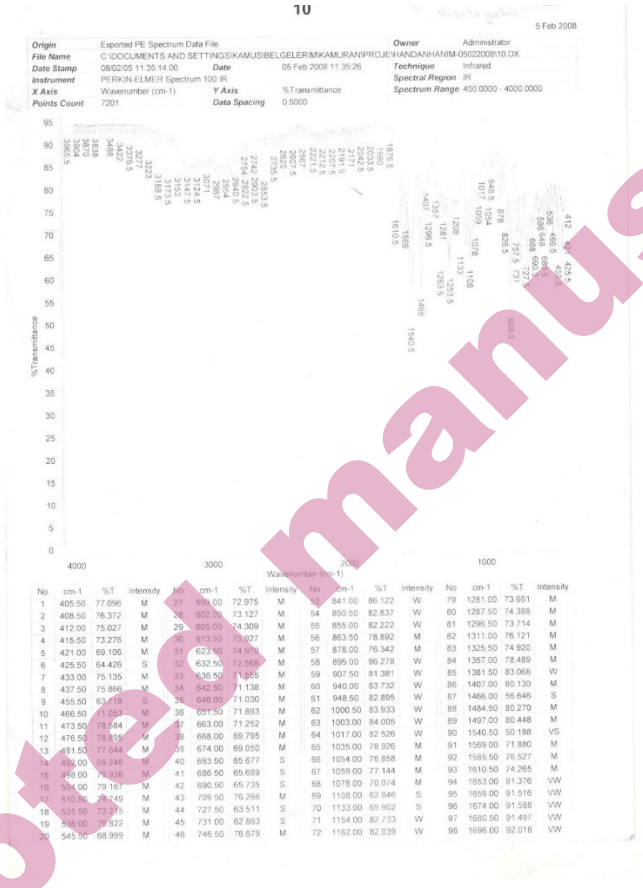
2-Chloro-N-[6-methyl-1,3-benzothiazol-2-yl]-N-[2-methylbenzyl] acetamide ***(5a)***. **Y**ield: 76%. M.p. 188-190°. FT-IR: 1698, 1600, 1509(Fig.S36). ^{1}H NMR(500 MHz, DMSO-d$_6$, δ): 2.49 (s, 6H, CH$_3$-Benzothiazole and Ar-CH$_3$), 4.55 (s, 2H, Ar-CH$_2$N-), 5.50 (s, 2H, N(CO)CH$_2$Cl), 6.76 (d, 1H, $J_{14,15}$=7.59 Hz, H15), 7.11 (t, 1H, $J_{12,14}$=7.54 Hz, H13), 7.18 (t, 1H, $J_{15,13}$=7.36 Hz, H14), 7.24 (d, 1H, $J_{13,12}$=8.20 Hz, H12), 7.28 (d, 1H, $J_{4,5}$=8.63 Hz, H5), 7.62 (d, 1H, $J_{5,4}$=8.27 Hz, H4), 7.84(s, 1H, H7) (Fig.S37). ^{13}C NMR(125 MHz, DMSO-d$_6$, δ): 19.99, 22.30, 44.62, 49.49, 122.16, 122.9, 124.72, 127.64, 128.37, 128.95, 131.69, 133.31, 134.12, 135.15, 135.54, 136.40, 152.03, 168.63 (Fig.S38). ESI-MS m/z= Calculated for (C$_{18}$H$_{17}$ClN$_2$SO + H$^+$) 345.1, observed 345.1(Fig.S40). Anal. Calcd for C$_{18}$H$_{17}$ClN$_2$SO: C 62.69, H 4.97, N 8.12, S 9.30 %. Found: C 62.48, H 5.006, N 8.339, S 9.265 %.

2-Chloro-N-[6-methyl-1,3-benzothiazol-2-yl]-N-[2-methoxybenzyl]acetamide ***(5b)***. Yield: 82%. M.p. 146-149°. FT-IR: 1683, 1605, 1520 (Fig.S41). ^{1}H NMR(500 MHz, DMSO-d$_6$, δ): 2.40 (s, 3H, CH$_3$-Benzothiazole), 3.53 (s, 3H, Ar-OCH$_3$), 4.75 (s, 2H, CH$_2$N), 5.43 (s, 2H, N(CO)CH$_2$Cl), 6.87 (t, 1H, $J_{12,14}$=7.35 Hz, H13), 6.92 (d, 1H, $J_{13,12}$=6.80 Hz, H12), 7.08 (d, 1H, $J_{14,15}$=8.21 Hz, H15), 7.25 (d, 1H, $J_{4,5}$=8.94 Hz, H5); 7.29 (t, 1H, $J_{15,13}$=7.30, H14), 7.63 (d, 1H, $J_{5,4}$=8.26 Hz, H4), 7.81 (s, 1H, H7) (Fig.S42, fig.S43

and S44). ^{13}C NMR(125 MHz, DMSO-d_6, δ): 21.48, 43.77, 46.79, 55.98, 61.29, 111.43, 121.02, 121.34, 121.61, 123.94, 126.50, 128.09, 129.16, 133.22, 134.24, 145.99, 157.00, 167.86 (Fig.S45). ESI-MS m/z= Calculated for ($C_{18}H_{17}ClN_2SO_2$ + H^+) 361.1, observed 361.1(Fig.S48). Anal. Calcd for $C_{18}H_{17}ClN_2SO_2$: C 59.91, H 4.75, N 7.76, S 8.89 %. Found: C 59.72, H 4.64, N 7.63, S 8.99 %.

2-[(Chloroacetyl)(6-methyl-1,3-benzothiazol-2-yl)aminomethyl]phenyl chloroacetate ***(5c)***. Yield: 78%. M.p. 159-161°. FT-IR: 1775, 1668, 1600, 1505. ^{1}H NMR(500 MHz, DMSO-d_6, δ): 2.40 (s, 3H, CH_3-Benzothiazole), 4.70 (s, 2H, Ar-CH_2N-), 4.80 (s, 2H, O(CO)CH_2Cl), 5.50 (s, 2H, N(CO)CH_2Cl), 7.07 (d, 1H, $J_{14,15}$=7.69 Hz, H15), 7.10 (d, 1H, $J_{4,5}$=7.49 Hz, H5), 7.20 (t, 1H, $J_{15,13}$=7.49 Hz, H14), 7.30 (d, 1H, $J_{13,12}$=8.03 Hz, H12), 7.40 (t, 1H $J_{12,14}$=7.89 Hz, H13), 7.65 (d, 1H, $J_{5,4}$=8.28 Hz, H4), 7.85 (s, 1H, H7). Anal. Calcd. for $C_{19}H_{16}Cl_2N_2O_3S$: C 53.90, H 3.81, N 6.62, S 7.58 %. Found: C 53.92, H 3.84, N 6.59, S 7.55 %.

4-[(Chloroacetyl)(6-methyl-1,3-benzothiazol-2-yl)aminomethyl]phenyl chloroacetate ***(5d)***. Yield: 82%. M.p. 156-158°. FT-IR: 1762, 1663, 1593, 1520. ^{1}H NMR(500 MHz, DMSO-d_6, δ): 2.43 (s, 3H, CH_3-Benzothiazole), 4.69 (s, 2H, Ar-CH_2N), 4.76 (s, 2H, O(CO)CH_2Cl), 5.57 (s, 2H,N(CO)CH_2Cl), 6.74 (d, 2H, $J_{11,15}$=7.69 Hz, H12 and H14), 7.10 (d, 2H, $J_{12,14}$=8.5 Hz, H11 and H15), 7.28 (d, 1H, $J_{4,5}$=7.35 Hz, H5), 7.69 (d, 1H, $J_{5,4}$=8.24 Hz, H4), 7.83 (s, 1H, H7), 8.59 (s, 1H, Ar-OH). Anal. Calcd. for $C_{19}H_{16}Cl_2N_2O_3S$: C 53.90, H 3.81, N 6.62, S 7.58 %. Found: C 53.88, H 3.83, N 6.61, S 7.55 %.



No	cm-1	%T	Intensity	No	cm-1	%T	Intensity	No	cm-1	%T	Intensity	No	cm-1	%T	Intensity
1	405.50	77.096	M	27	599.00	72.975	M	53	841.00	86.122	W	79	1281.00	73.661	M
2	408.50	76.372	M	28	602.00	73.127	M	54	850.50	82.837	W	80	1287.50	74.388	M
3	412.00	75.027	M	29	605.00	74.309	M	55	855.00	82.222	W	81	1296.50	73.714	M
4	415.50	73.276	M	30	613.50	73.027	M	56	863.50	78.892	M	82	1311.00	76.121	M
5	421.00	69.106	M	31	623.50	74.970	M	57	878.00	76.342	M	83	1325.50	74.920	M
6	425.50	64.426	S	32	632.50	72.568	M	58	895.00	86.278	W	84	1357.00	78.489	M
7	433.00	75.135	M	33	636.50	71.955	M	59	907.50	81.381	W	85	1381.50	83.068	W
8	437.50	75.866	M	34	642.50	71.138	M	60	940.00	83.732	W	86	1407.00	80.130	M
9	455.50	63.118	S	35	648.00	71.030	M	61	948.50	82.895	W	87	1466.00	56.645	S
10	466.50	71.053	M	36	651.50	71.893	M	62	1000.50	83.933	W	88	1484.50	80.270	M
11	473.50	78.584	M	37	663.00	71.252	M	63	1003.00	84.005	W	89	1497.00	80.448	M
12	476.50	78.859	M	38	668.00	69.795	M	64	1017.00	82.526	W	90	1540.50	50.188	VS
13	481.50	77.044	M	39	674.00	69.050	M	65	1035.00	78.926	M	91	1569.00	71.880	M
14	492.00	68.246	M	40	683.50	65.677	S	66	1054.00	76.858	M	92	1585.50	76.527	M
15	498.00	76.938	M	41	686.50	65.689	S	67	1059.00	77.144	M	93	1610.50	74.265	M
16	504.00	79.187	M	42	690.50	65.735	S	68	1078.00	70.074	M	94	1653.00	91.376	VW
17	510.50	74.749	M	43	709.50	76.266	M	69	1108.00	62.846	S	95	1659.00	91.516	VW
18	525.50	73.215	M	44	727.50	63.511	S	70	1133.00	65.902	S	96	1674.00	91.588	VW
19	536.00	79.522	M	45	731.00	62.863	S	71	1154.00	82.733	W	97	1680.50	91.497	VW
20	545.50	68.999	M	46	746.50	76.679	M	72	1162.00	82.039	W	98	1696.00	92.018	VW

Figure S1.FT-IR spectrum of N-[2-Methylphenyl)methylidene]-6-methyl-1,3-benzothiazol-2-amine (**3a**).

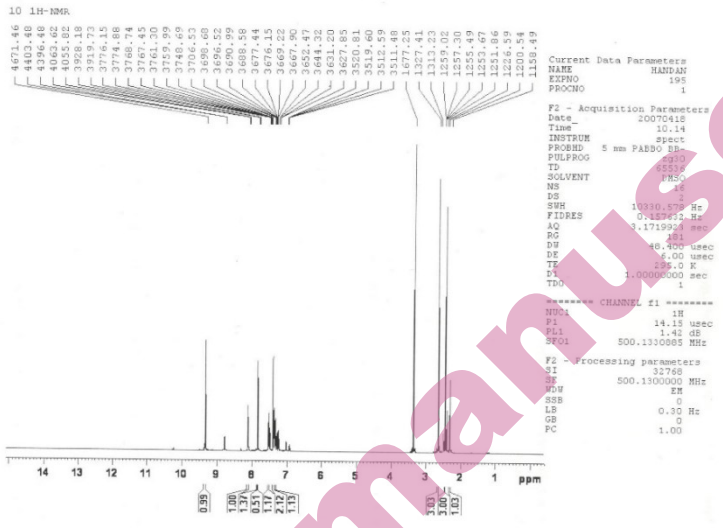


Figure S2. ^{1}H NMR spectrum of N-[2-Methylphenyl)methylidene]-6-methyl-1,3-benzothiazol-2-amine (**3a**)

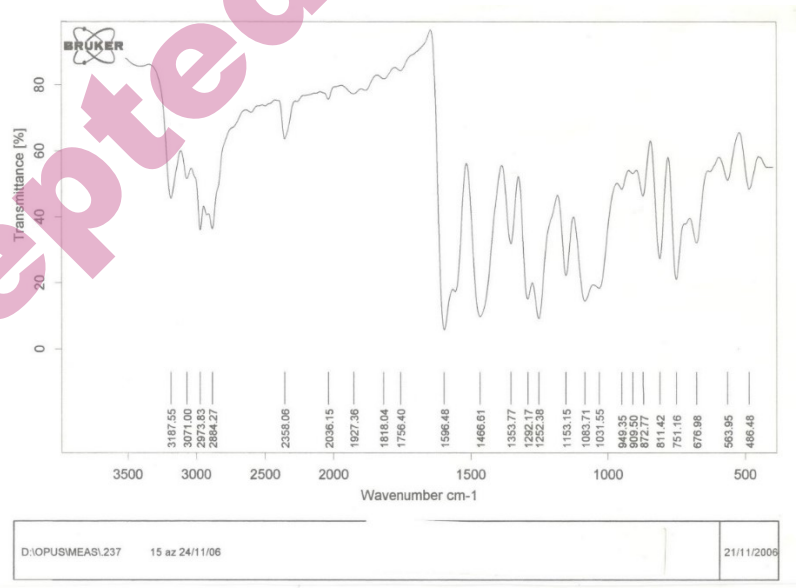


Figure S3. FT-IR spectrum of *N*-[2-Methoxyphenyl)methylidene]-6-methyl-1,3-benzothiazol-2-amine (**3b**)

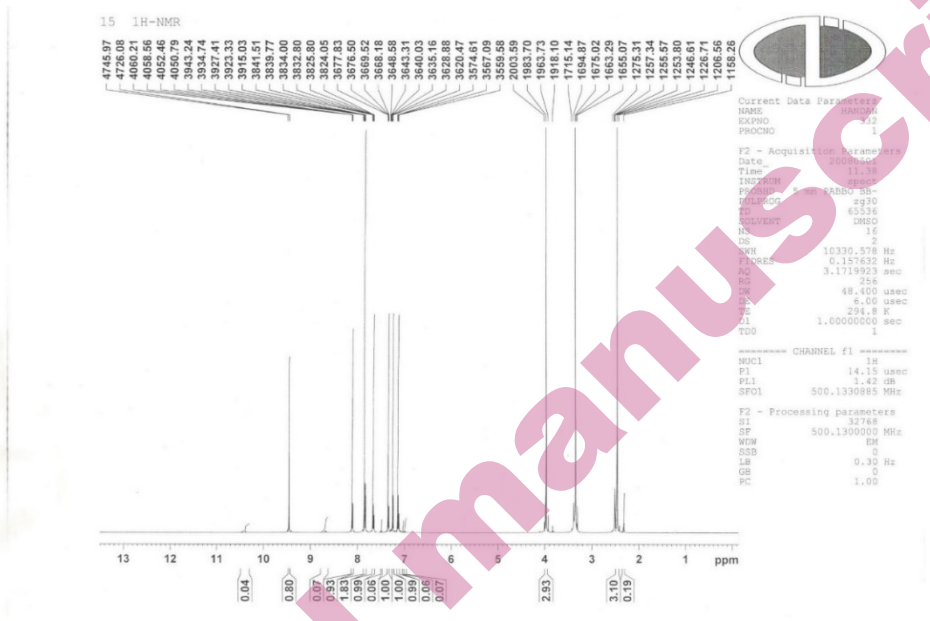


Figure S4. ^{1}H NMR spectrum of *N*-[2-Methoxyphenyl)methylidene]-6-methyl-1,3-benzothiazol-2-amine (**3b**)

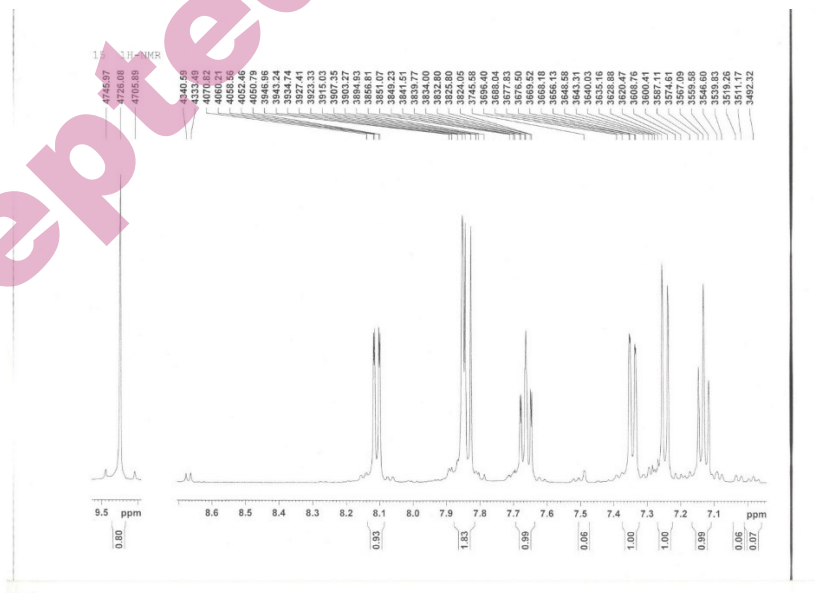


Figure S5. ^{1}H NMR spectrum of *N*-[2-Methoxyphenyl)methylidene]-6-methyl-1,3-benzothiazol-2-amine (**3b**)

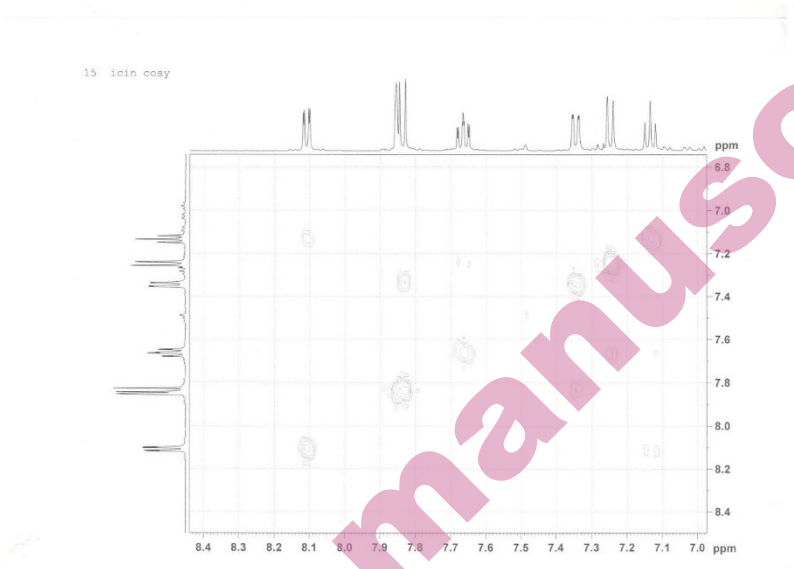


Figure S6. ^{1}H-^{1}H COSY spectrum of *N*-[2-Methoxyphenyl)methylidene]-6-methyl-1,3-benzothiazol-2-amine (**3b**).

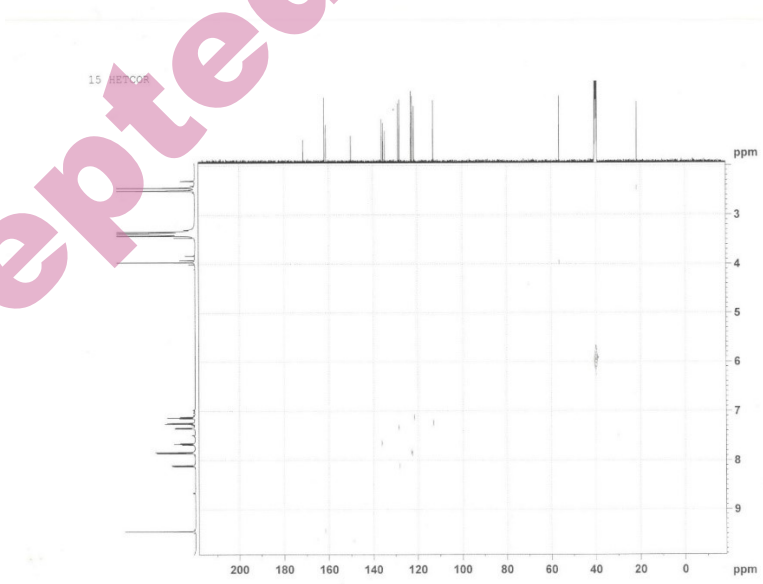


Figure S7. HETCOR spectrum of *N*-[2-Methoxyphenyl)methylidene]-6-methyl-1,3-benzothiazol-2-amine (3b)

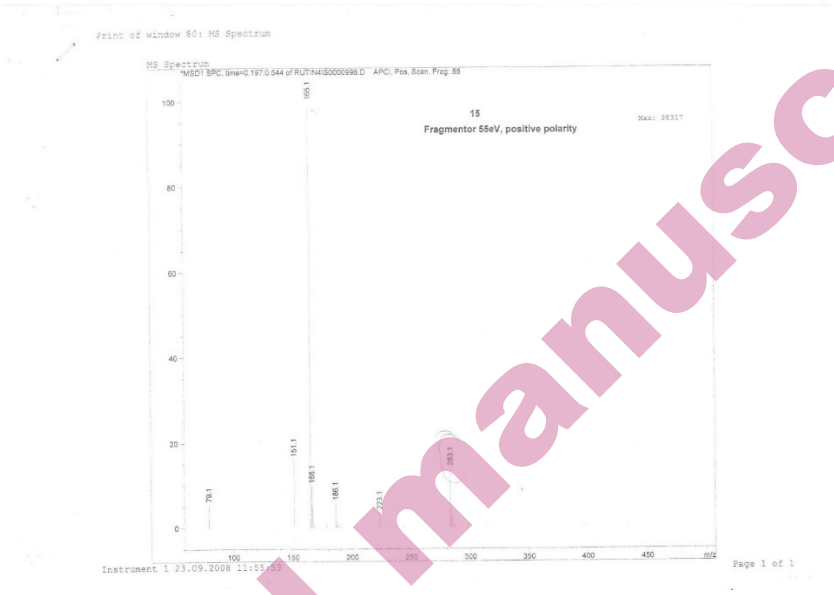


Figure S8. ESI-MS spectrum of *N*-[2-Methoxyphenyl)methylidene]-6-methyl-1,3-benzothiazol-2-amine (**3b**)

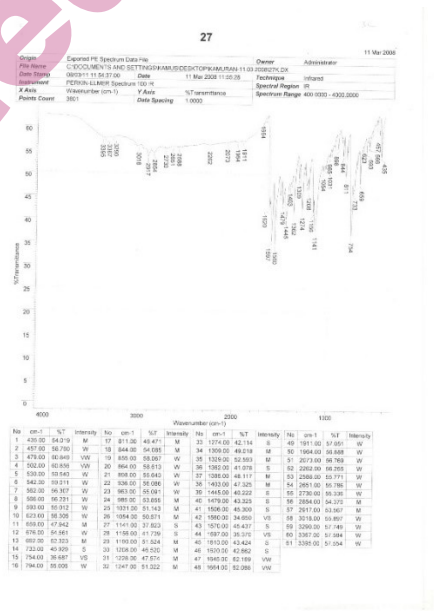


Figure S9. FT-IR Spectrum of *N*-[2-hyroxyphenyl)methylidene]-6-methyl-1,3-benzothiazol-2-amine (**3c**)

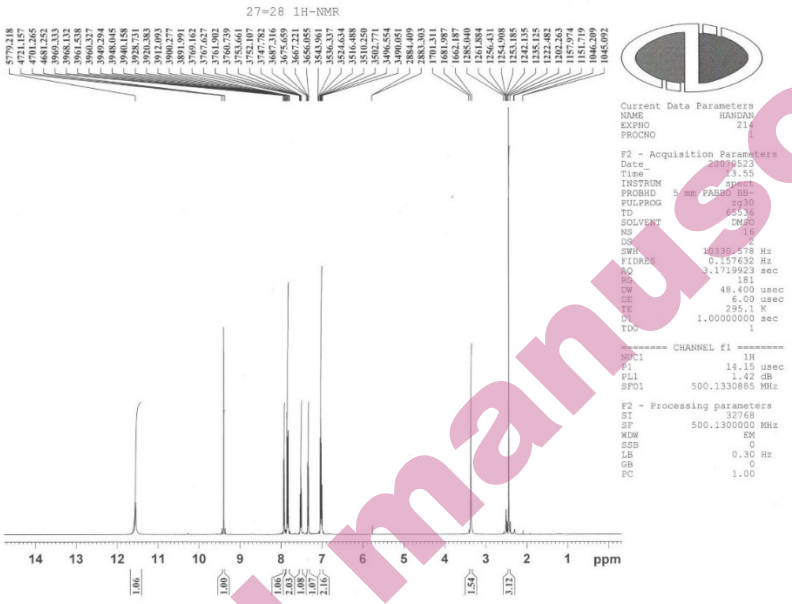


Figure S10. ^{1}H NMR spectrum of *N*-[2-hyroxyphenyl)methylidene]-6-methyl-1,3-benzothiazol-2-amine (**3c**)

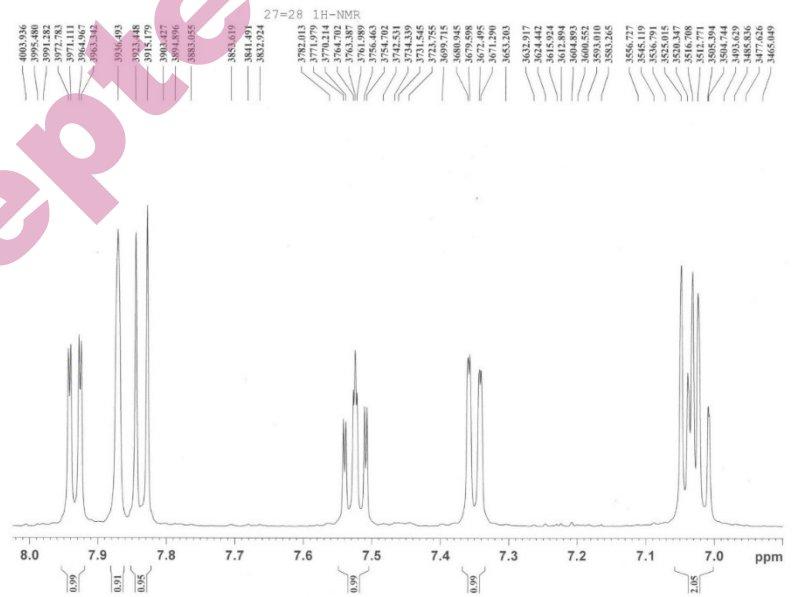


Figure S11. ^{1}H NMR spectrum of *N*-[2-hyroxyphenyl)methylidene]-6-methyl-1,3-benzothiazol-2-amine (**3c**)

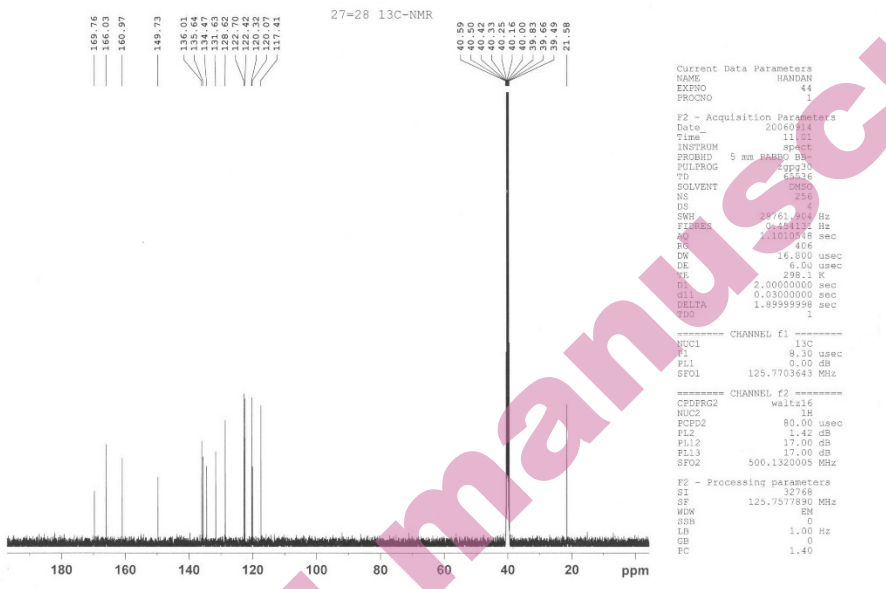


Figure S12. ^{13}C NMR spectum of *N*-[2-hyroxyphenyl)methylidene]-6-methyl-1,3-benzothiazol-2-amine (3c).

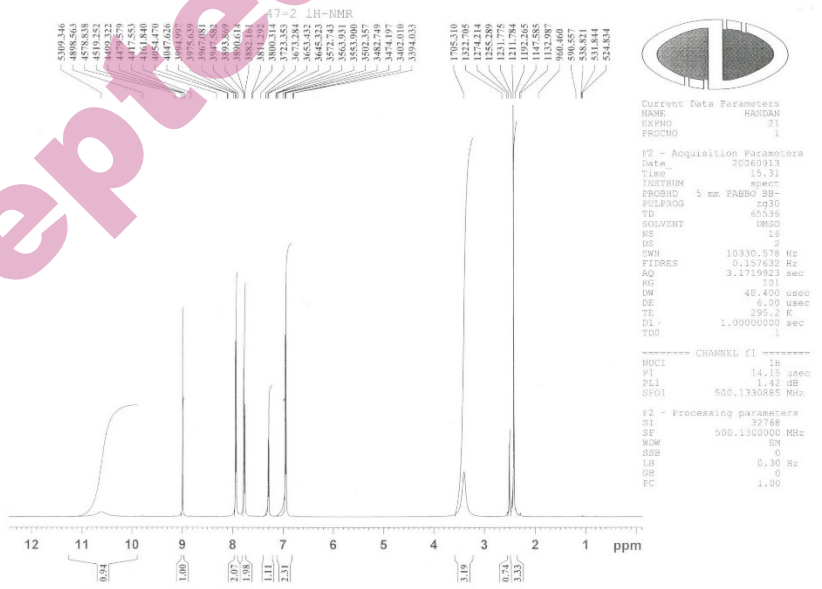


Figure S13. ^{1}H NMR spectrum of *N*-[4-hydroxyphenyl)methylidene]-6-methyl-1,3-benzothiazol-2-amine (3d)

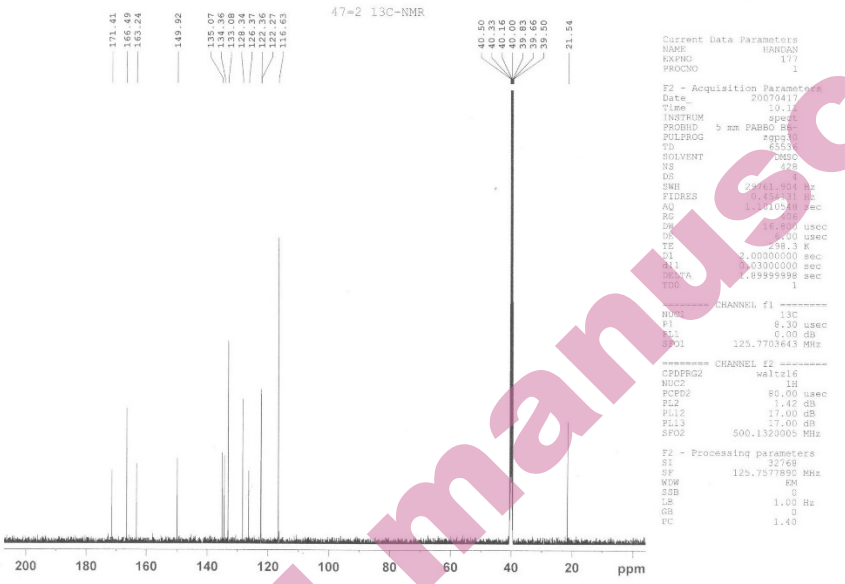


Figure S14. ^{13}C NMR spectrum of *N*-[4-hydroxyphenyl)methylidene]-6-methyl-1,3-benzothiazol-2-amine (**3d**).

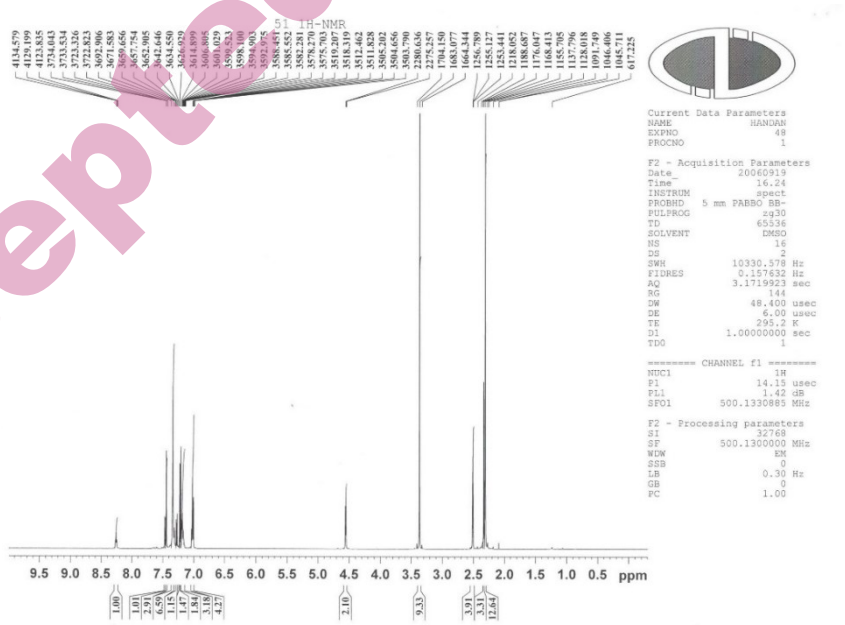


Figure S15. ^{1}H NMR spectrum of *N*-(2-methylbenzyl)-6-Methyl-1,3-benzothiazol-2-amine (**4a**)

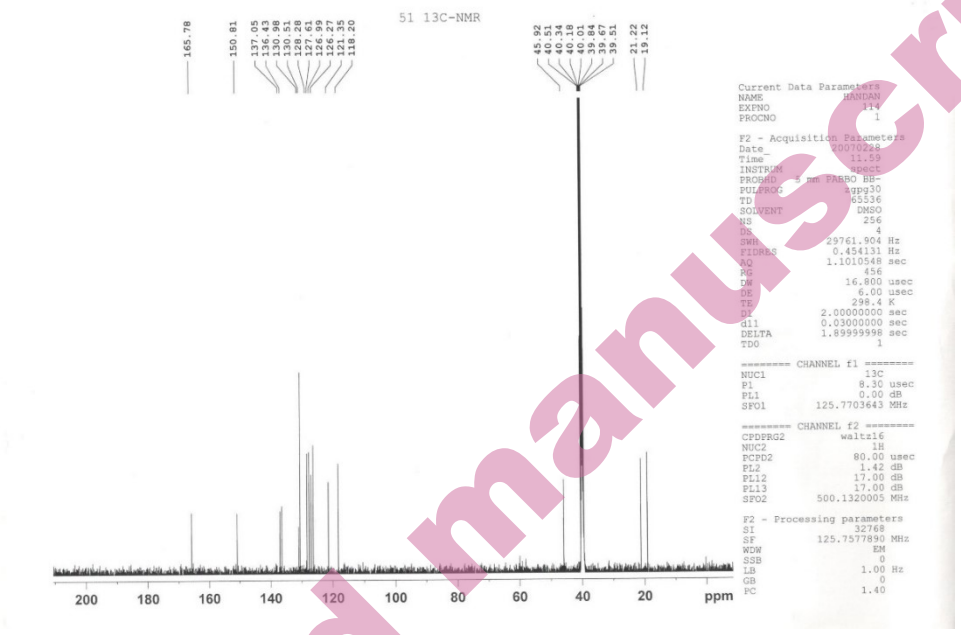


Figure S16. ^{13}C NMR spectrum of *N*-(2-methylbenzyl)-6-Methyl-1,3-benzothiazol-2-amine (**4a**)

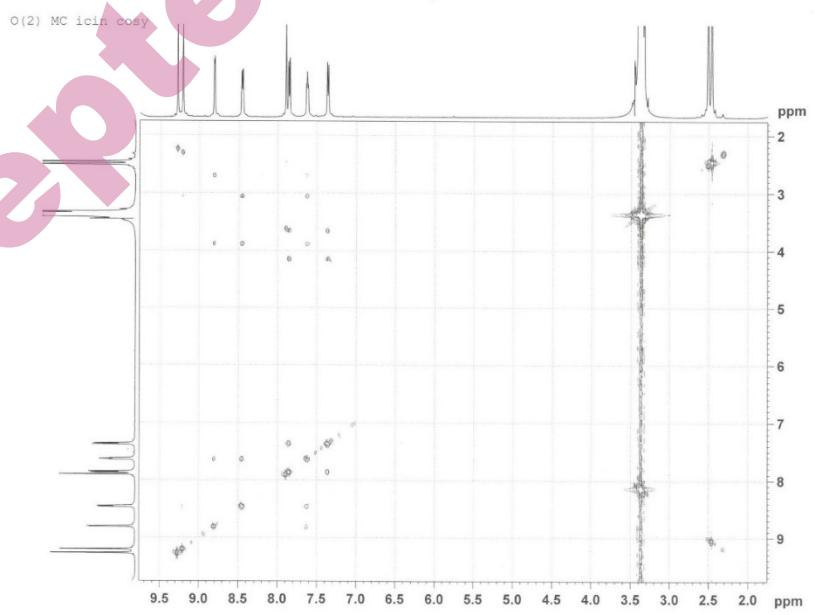


Figure S17. COSY spectrum of *N*-(2-methylbenzyl)-6-Methyl-1,3-benzothiazol-2-amine (**4a**)

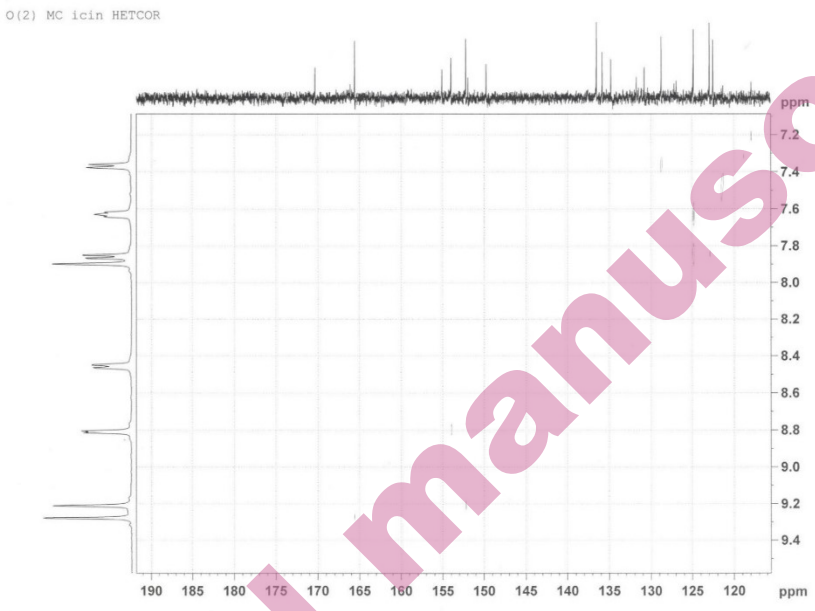


Figure S18. HETCOR spectrum of *N*-(2-methylbenzyl)-6-Methyl-1,3-benzothiazol-2-amine (**4a**)

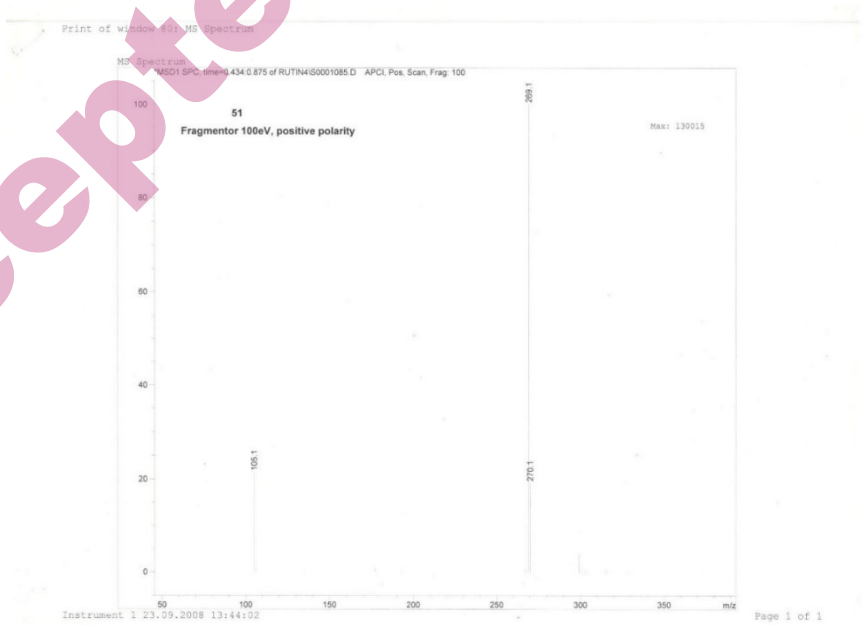


Figure S19. ESI-MS spectrum of *N*-(2-methylbenzyl)-6-Methyl-1,3-benzothiazol-2-amine (4a)

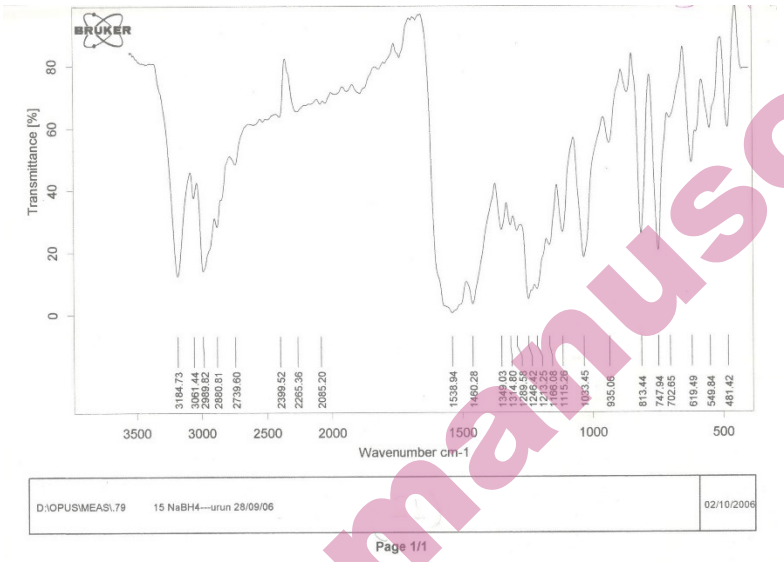


Figure S20. FT-IR spectrum of *N*-(2-methoxybenzyl)-6-Methyl-1,3-benzothiazol-2-amine (**4b**).

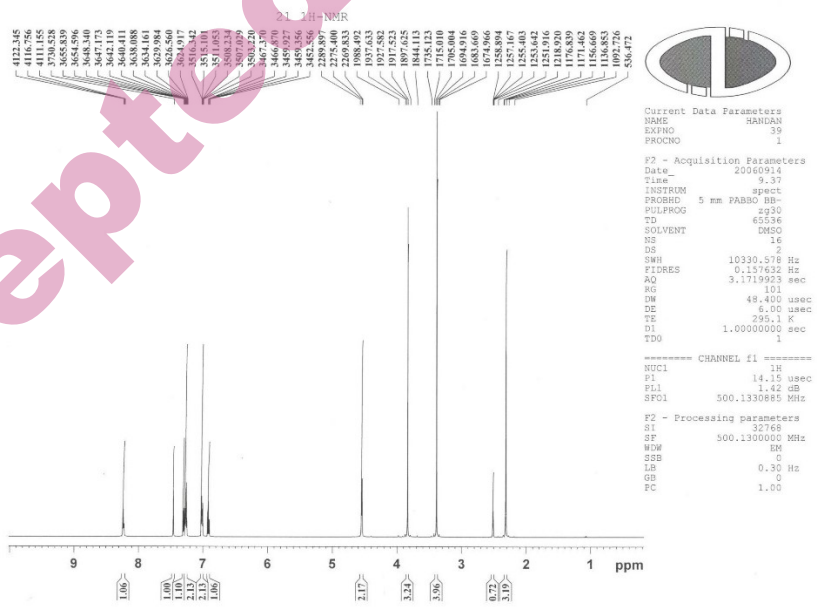


Figure S21. ^{1}H NMR spectrum of *N*-(2-methoxybenzyl)-6-Methyl-1,3-benzothiazol-2-amine (**4b**).

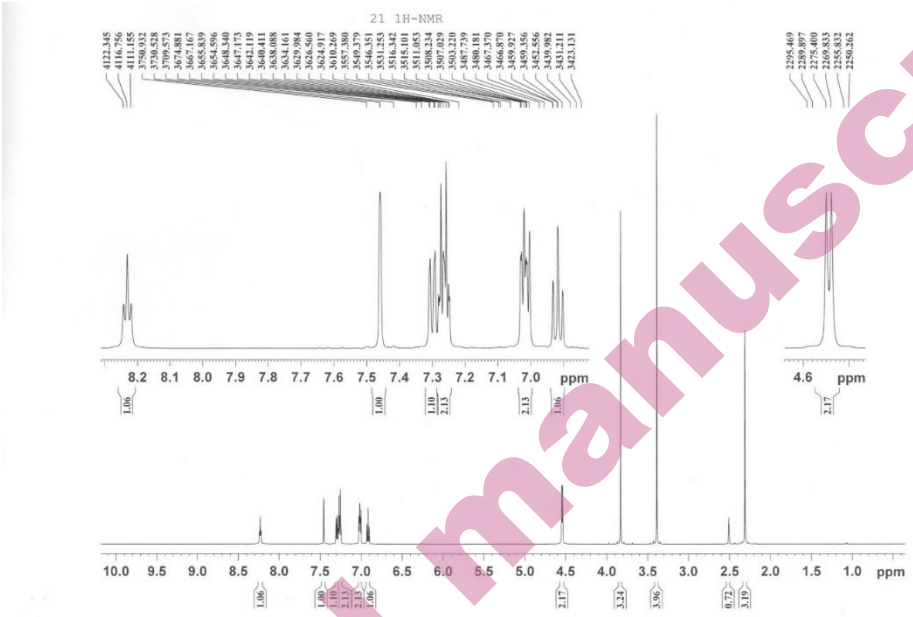


Figure S22. ^{1}H NMR spectrum of *N*-(2-methoxybenzyl)-6-Methyl-1,3-benzothiazol-2-amine (**4b**).

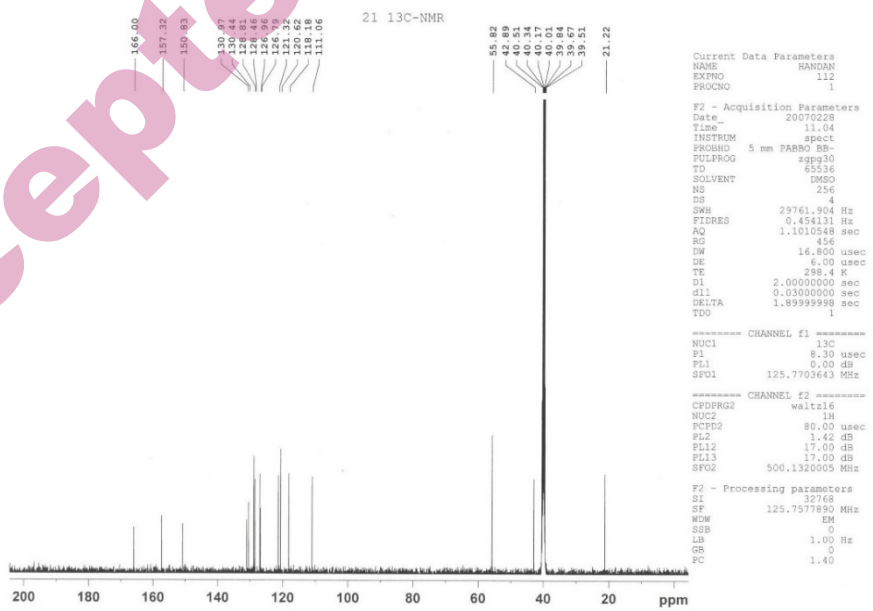


Figure S23. ^{13}C NMR spectrum of *N*-(2-methoxybenzyl)-6-Methyl-1,3-benzothiazol-2-amine (**4b**).

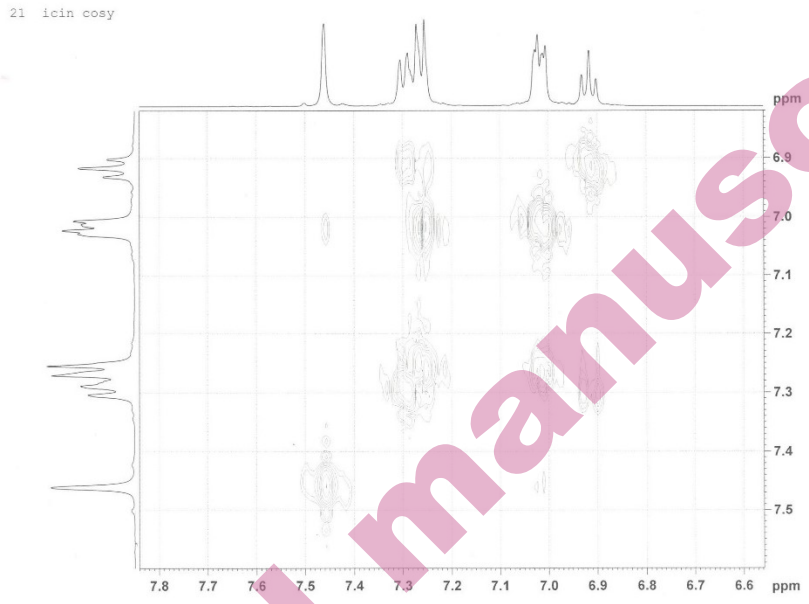


Figure S24. COSY spectrum of *N*-(2-methoxybenzyl)-6-Methyl-1,3-benzothiazol-2-amine (**4b**)

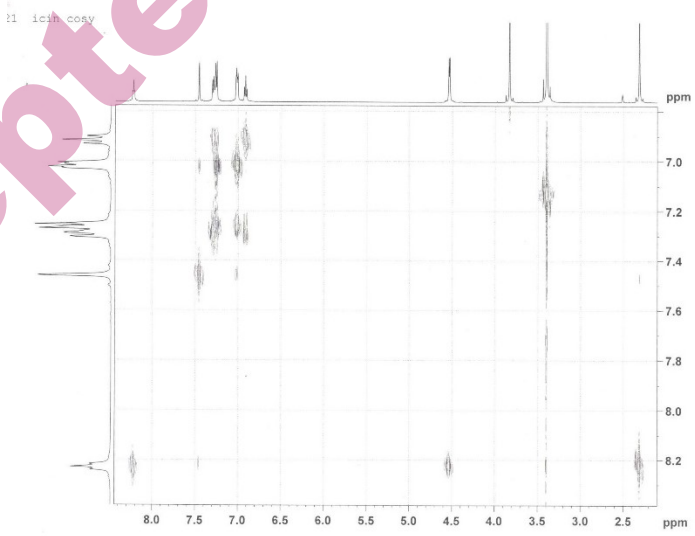


Figure S25. COSY spectrum of *N*-(2-methoxybenzyl)-6-Methyl-1,3-benzothiazol-2-amine (**4b**)

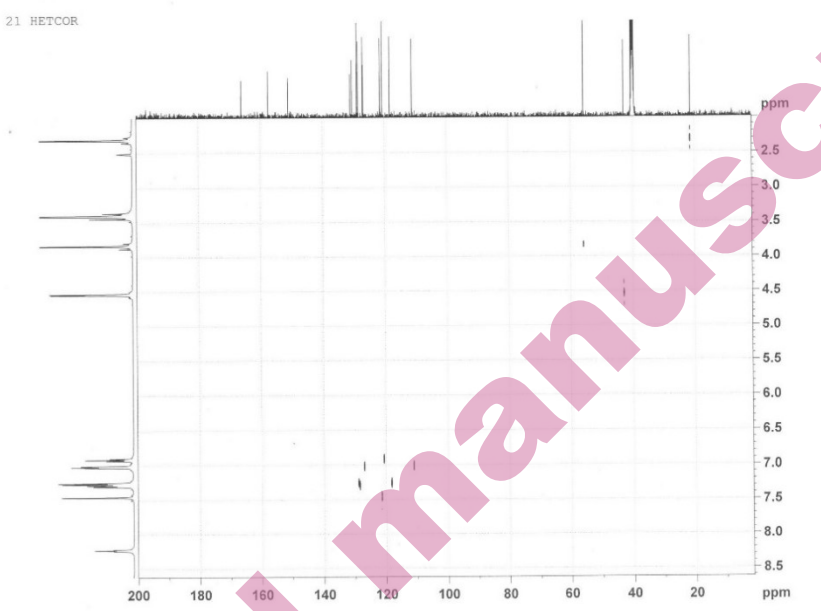


Figure S26. HETCOR spectrum of *N*-(2-methoxybenzyl)-6-Methyl-1,3-benzothiazol-2-amine (**4b**)

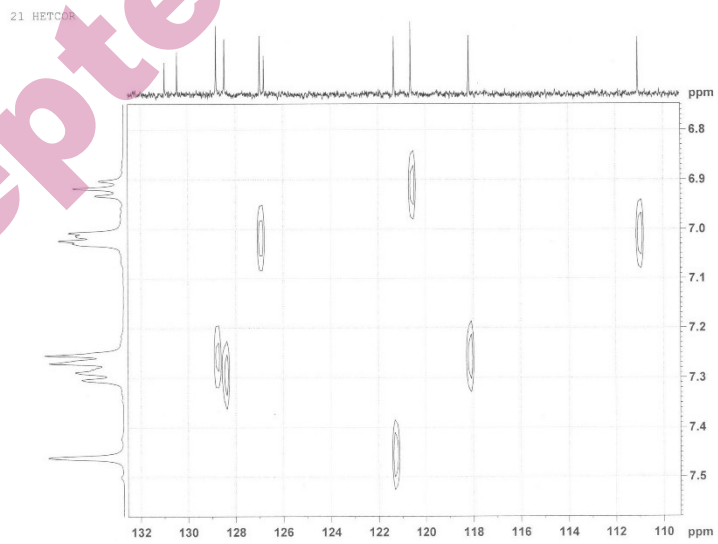
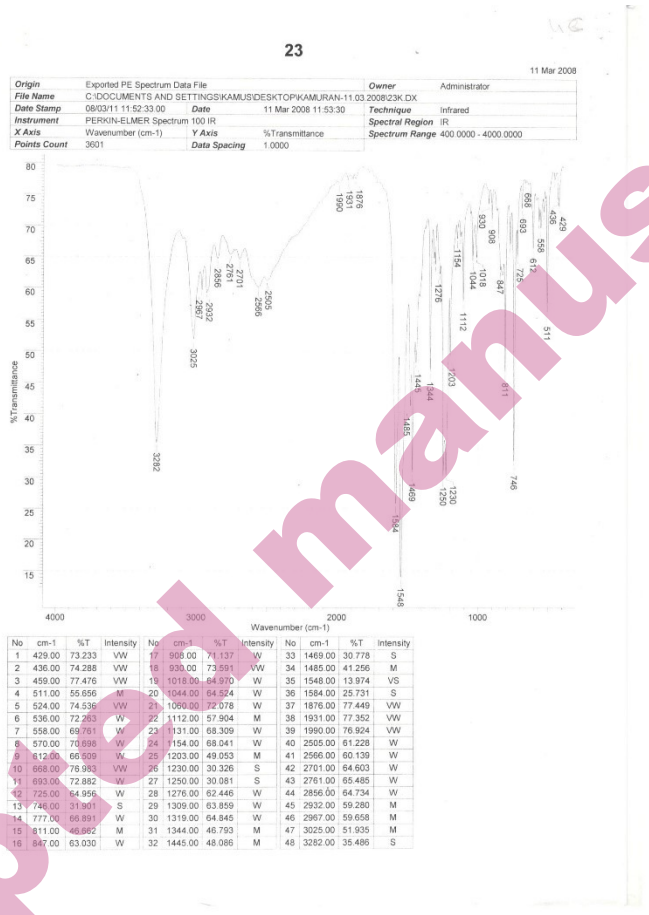


Figure S27. HETCOR spectrum of *N*-(2-methoxybenzyl)-6-Methyl-1,3-benzothiazol-2-amine (**4b**)



No	cm-1	%T	Intensity	No	cm-1	%T	Intensity	No	cm-1	%T	Intensity
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2	436.00	74.288	VW	18	930.00	73.591	VW	34	1485.00	41.256	M
3	459.00	77.476	VW	19	1018.00	84.970	W	35	1548.00	13.974	VS
4	511.00	55.656	M	20	1044.00	64.524	W	36	1584.00	25.731	S
5	524.00	74.536	VW	21	1060.00	72.078	W	37	1876.00	77.449	VW
6	536.00	72.263	W	22	1112.00	57.904	M	38	1931.00	77.352	VW
7	558.00	69.761	W	23	1131.00	68.309	W	39	1990.00	76.924	VW
8	570.00	70.698	W	24	1154.00	68.041	W	40	2505.00	61.228	W
9	612.00	66.509	W	25	1203.00	49.053	M	41	2566.00	60.139	W
10	668.00	76.983	VW	26	1230.00	30.326	S	42	2701.00	64.603	W
11	693.00	72.882	W	27	1250.00	30.081	S	43	2761.00	65.485	W
12	725.00	64.956	W	28	1276.00	62.446	W	44	2856.00	64.734	W
13	746.00	31.901	S	29	1309.00	63.859	W	45	2932.00	59.280	M
14	777.00	66.891	W	30	1319.00	64.845	W	46	2967.00	59.658	M
15	811.00	46.662	M	31	1344.00	46.793	M	47	3025.00	51.935	M
16	847.00	63.030	W	32	1445.00	48.086	M	48	3282.00	35.486	S

Figure S28. FT-IR spectrum of *N*-(2-hyroxybenzyl)-6-Methyl-1,3-benzothiazol-2-amine (**4c**).

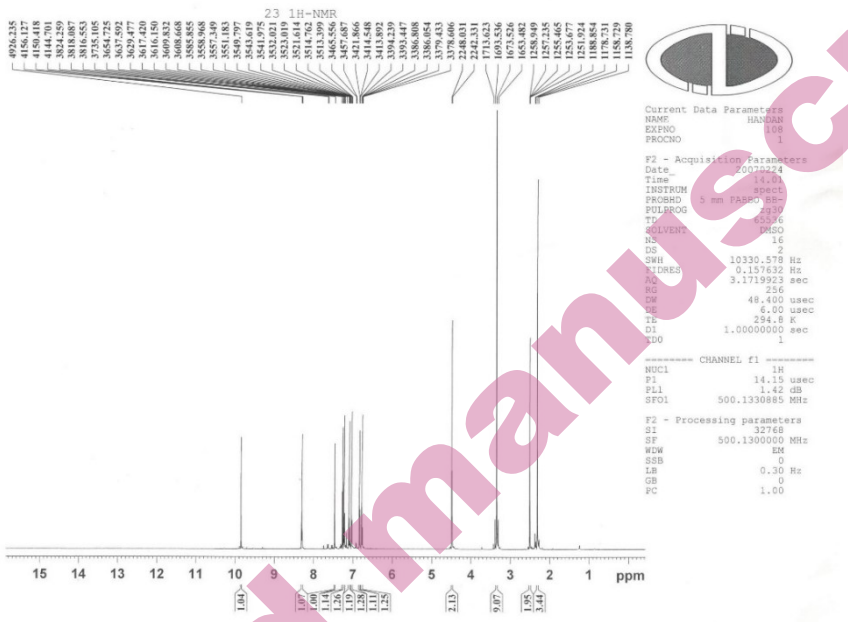

Figure S29. ^{1}H NMR spectrum of *N*-(2-hyroxybenzyl)-6-Methyl-1,3-benzothiazol-2-amine (**4c**).

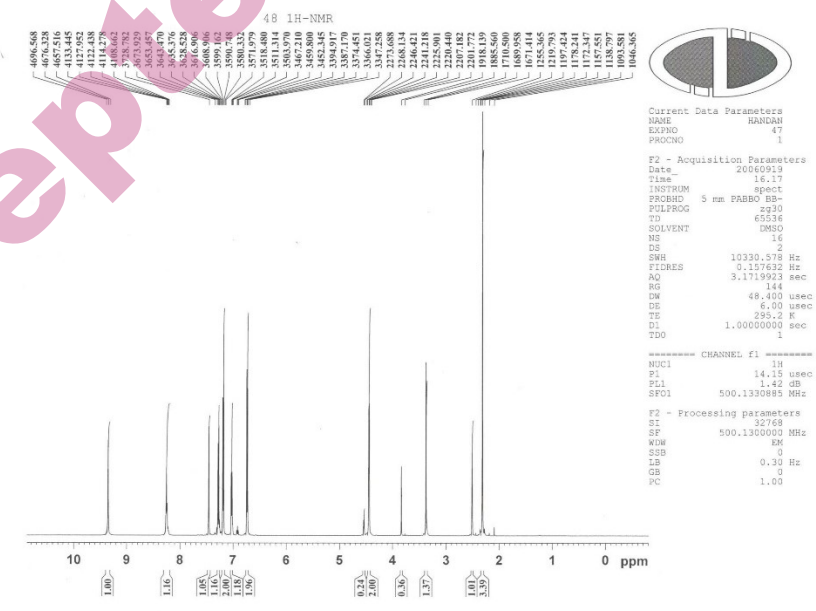

Figure S30. ^{1}H NMR spectrum of *N*-(4-hyroxybenzyl)-6-Methyl-1,3-benzothiazol-2-amine (**4d**).

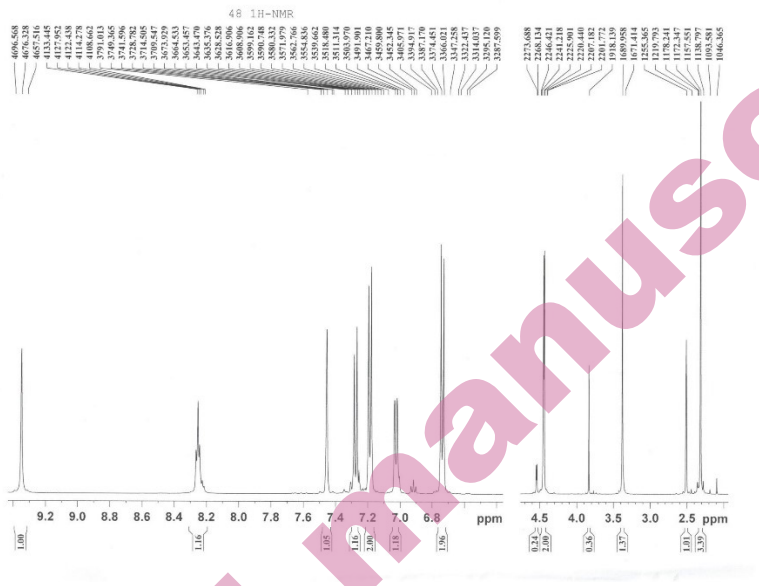

Figure S31. [1]H NMR spectrum of *N*-(4-hyroxybenzyl)-6-Methyl-1,3-benzothiazol-2-amine (**4d**).

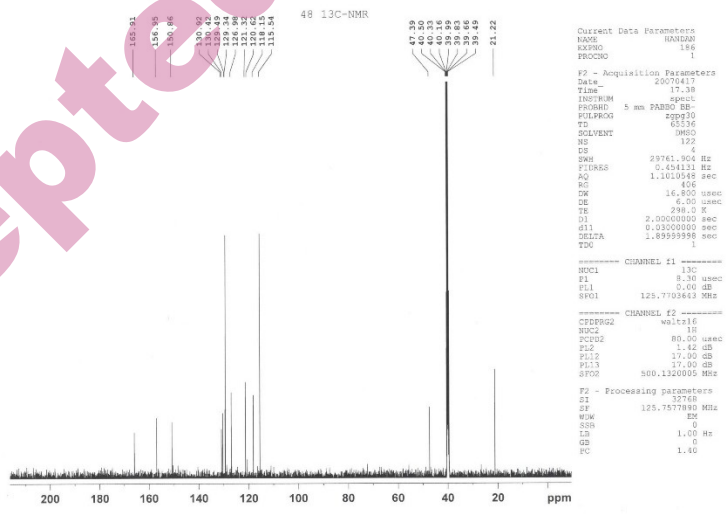

Figure S32. [13]C NMR spectrum of *N*-(4-hyroxybenzyl)-6-Methyl-1,3-benzothiazol-2-amine (**4d**).

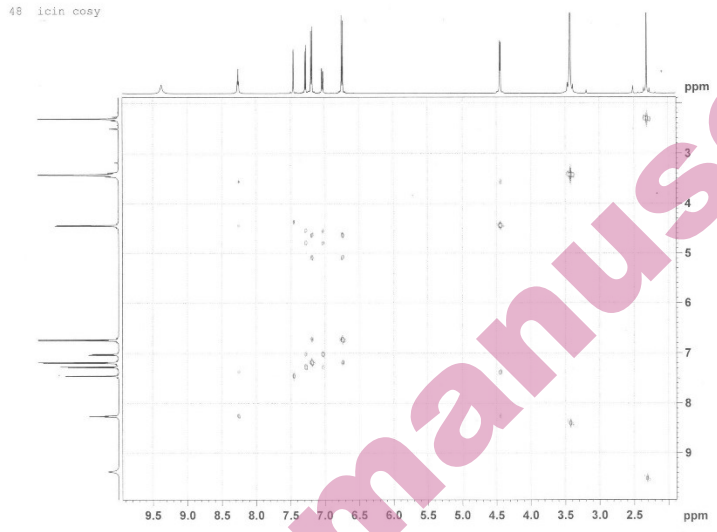

Figure S33. COSY spectrum of *N*-(4-hyroxybenzyl)-6-Methyl-1,3-benzothiazol-2-amine (**4d**).

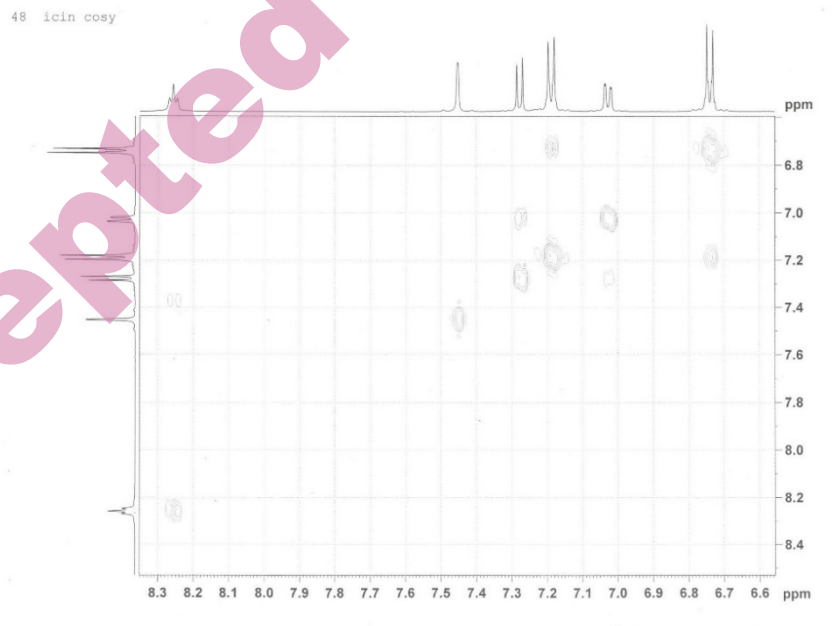

Figure S34. COSY spectrum of *N*-(4-hyroxybenzyl)-6-Methyl-1,3-benzothiazol-2-amine (**4d**).

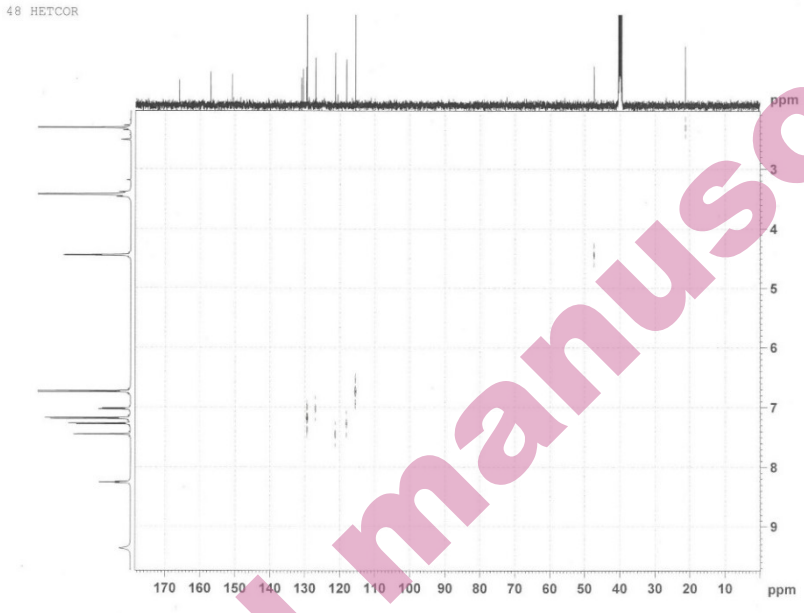

Figure S35. HETCOR spectrum of *N*-(4-hyroxybenzyl)-6-Methyl-1,3-benzothiazol-2-amine (**4d**).

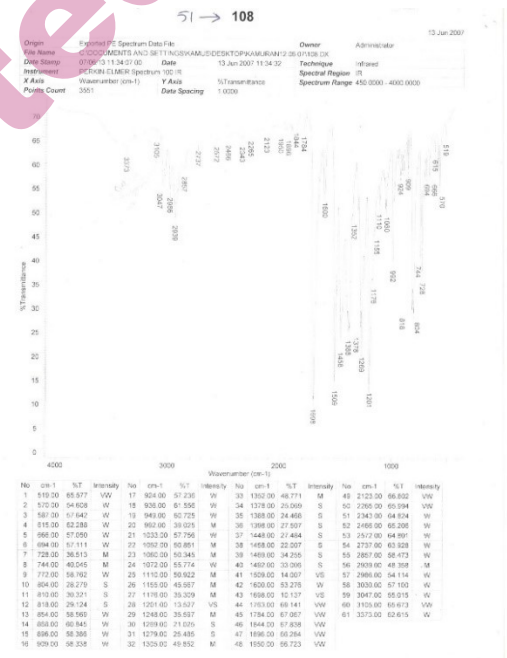

Figure S36. FT-IR spectrum of 2-Chloro-*N*-[6-methyl-1,3-benzothiazol-2-yl]-*N*-[2-methylbenzyl] acetamide **(5a**).

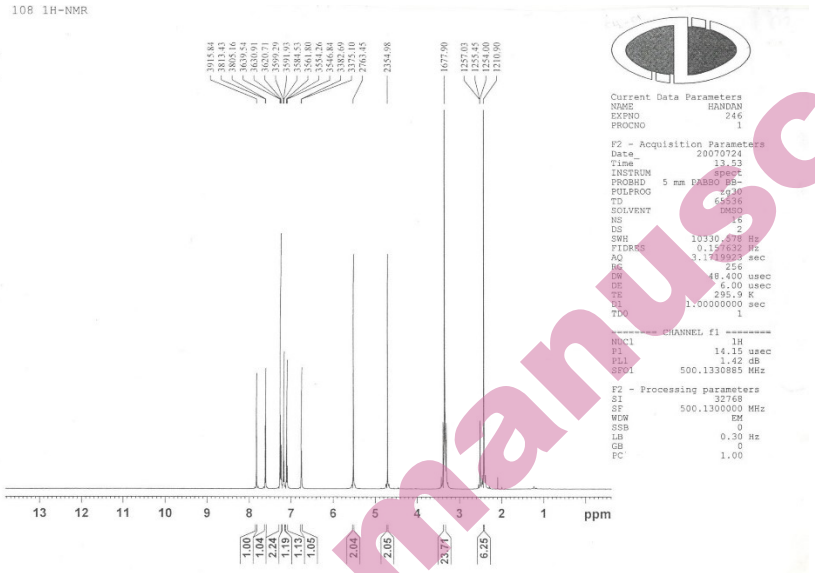

Figure S37. [1]H NMR spectrum of 2-Chloro-*N*-[6-methyl-1,3-benzothiazol-2-yl]-*N*-[2-methylbenzyl] acetamide (**5a**).

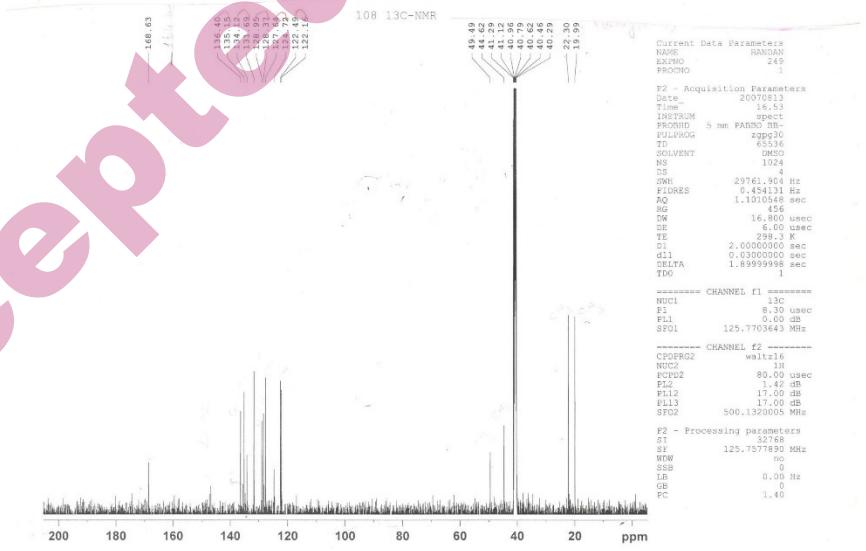

Figure S38. [13]C NMR spectrum of 2-Chloro-*N*-[6-methyl-1,3-benzothiazol-2-yl]-*N*-[2-methylbenzyl] acetamide (**5a**).

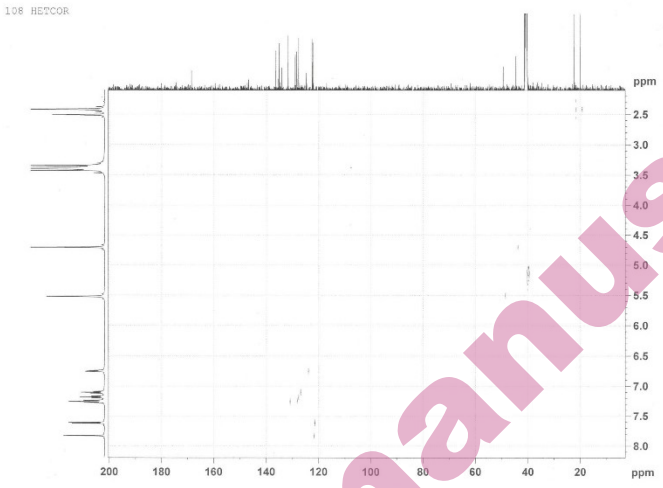

Figure S39. HETCOR spectrum of 2-Chloro-*N*-[6-methyl-1,3-benzothiazol-2-yl]-*N*-[2-methylbenzyl] acetamide (**5a**).

Figure S40. ESI-MS spectrum of 2-Chloro-*N*-[6-methyl-1,3-benzothiazol-2-yl]-*N*-[2-methylbenzyl] acetamide (**5a)**

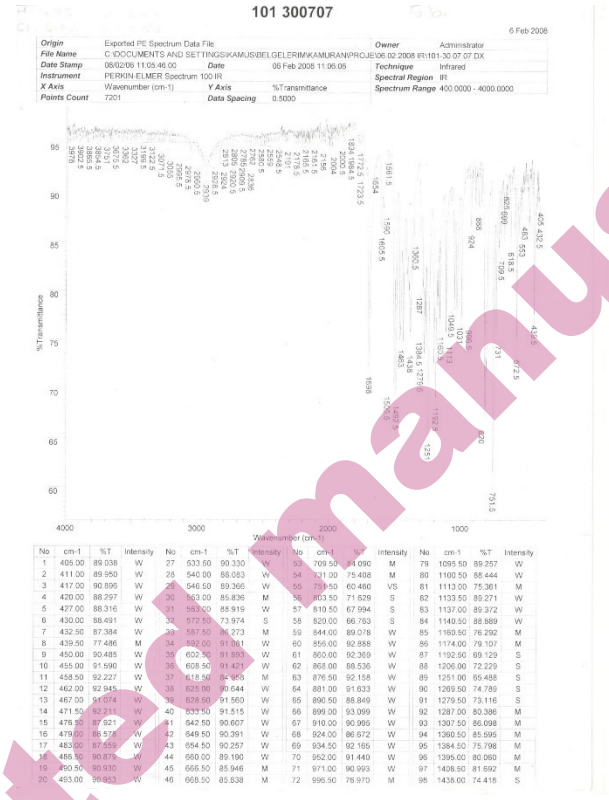

Figure S41. FT-IR spectrum of 2-Chloro-N-[6-methyl-1,3-benzothiazol-2-yl]-N-[2-methoxybenzyl]acetamide (**5b**).

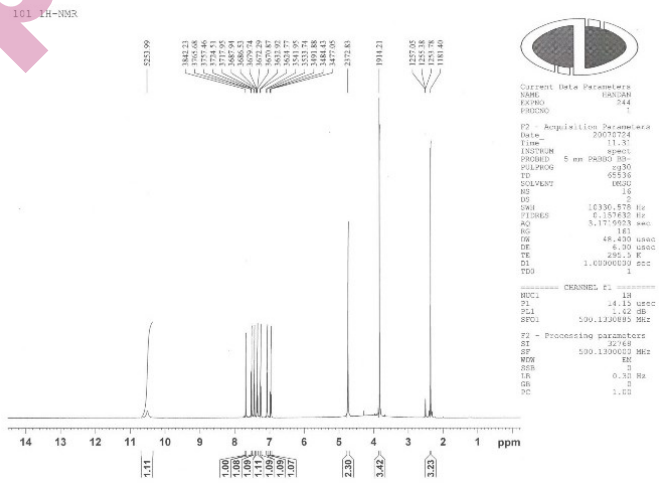

Figure S42. ^{1}H NMR spectrum of 2-Chloro-*N*-[6-methyl-1,3-benzothiazol-2-yl*]*-N-[2-methoxybenzyl]acetamide (**5b**).

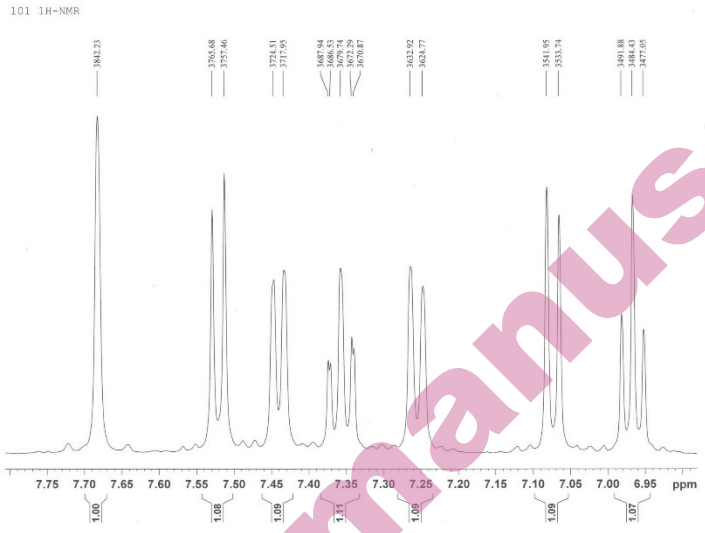

Figure S43. [1]H NMR spectrum of 2-Chloro-N-[6-methyl-1,3-benzothiazol-2-yl]-N-[2-methoxybenzyl]acetamide(**5b**).

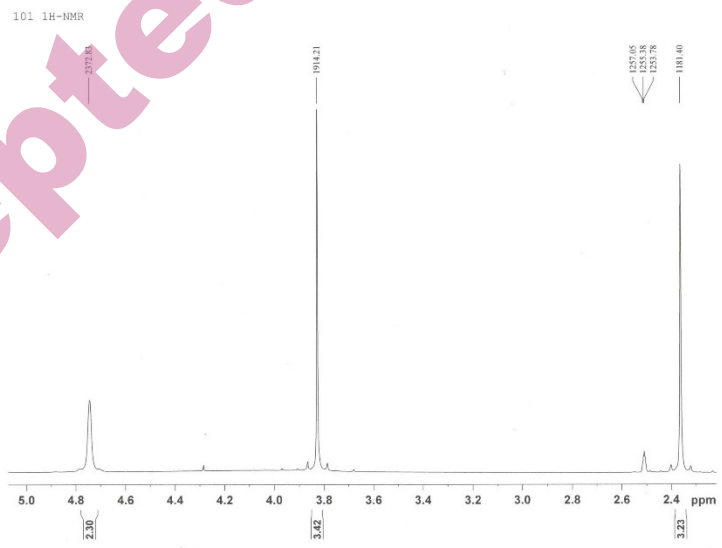

Figure S44. [1]H NMR spectrum of 2-Chloro-N-[6-methyl-1,3-benzothiazol-2-yl]-N-[2-methoxybenzyl]acetamide(**5b**).

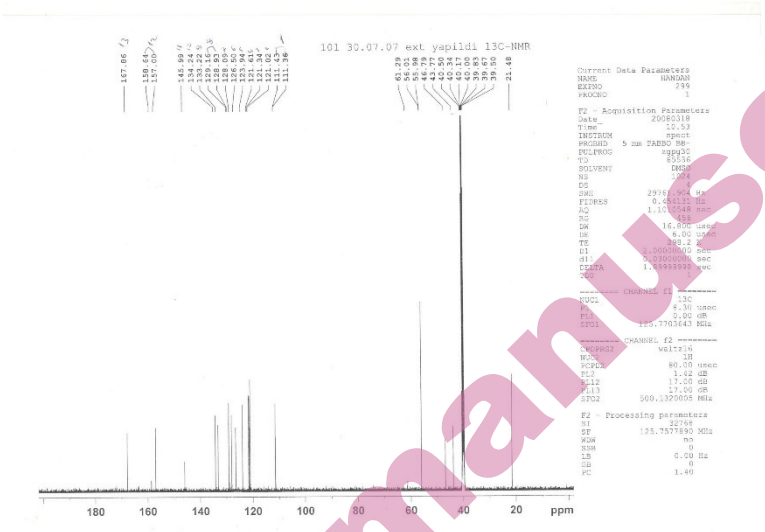

Figure S45. ^{13}C NMR spectrum of 2-Chloro-N-[6-methyl-1,3-benzothiazol-2-yl]-N-[2-methoxybenzyl]acetamide **(5b)**.

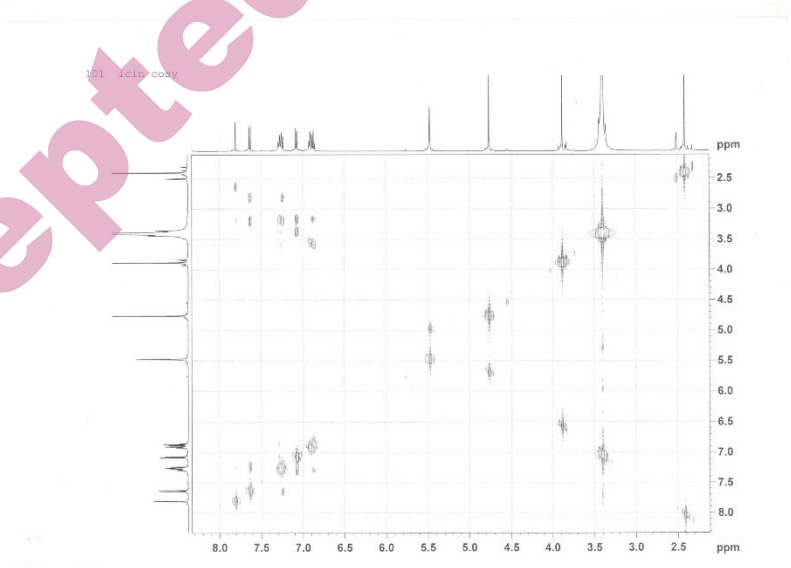

Figure S46. COSY spectrum of 2-Chloro-N-[6-methyl-1,3-benzothiazol-2-yl]-N-[2-methoxybenzyl]acetamide (**5b**).

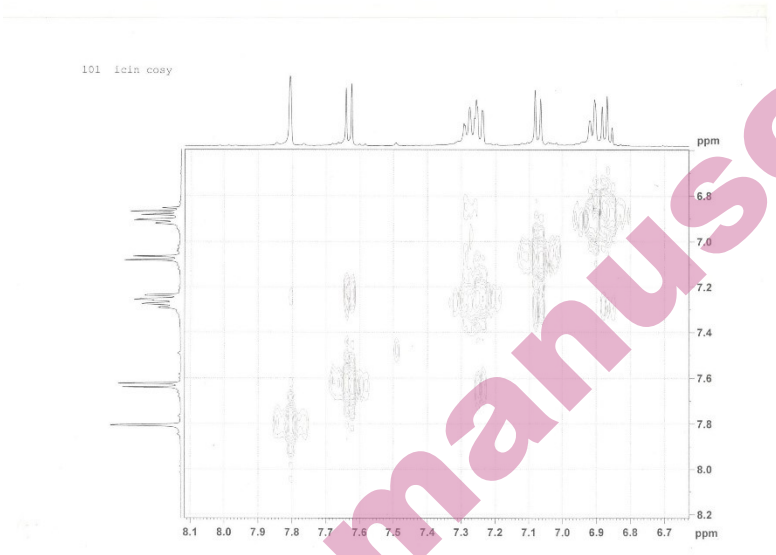

Figure S47. COSY spectrum of 2-Chloro-*N*-[6-methyl-1,3-benzothiazol-2-yl]-*N*-[2-methoxybenzyl]acetamide (**5b**).

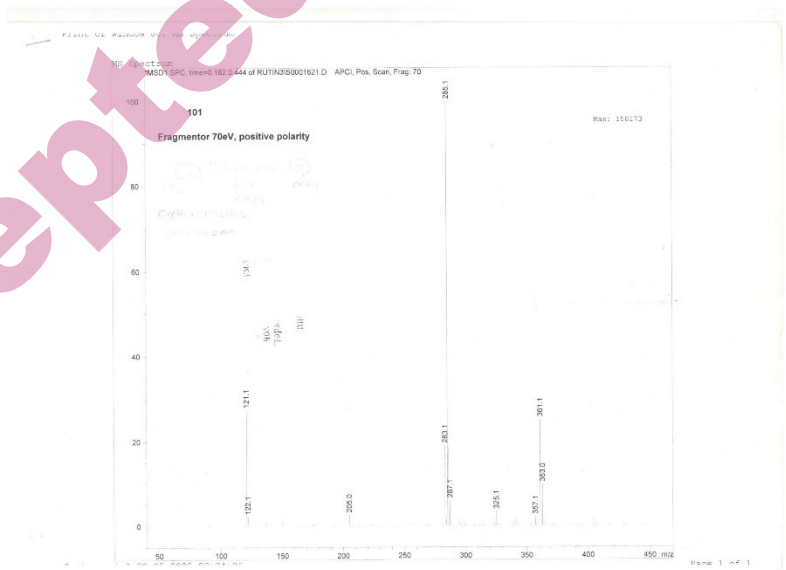

Figure S48. ESI-MS spectrum of 2-Chloro-N-[6-methyl-1,3-benzothiazol-2-yl]-N-[2-methoxybenzyl]acetamide (**5b**).