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SUPPLEMENTARY MATERIAL TO

Synthesis and antimicrobial evaluation of some novel thiomorpholine derived 1,4-disubstituted 1,2,3-triazoles

KUMARASWAMY BATTULA[1], SIRASSU NARSIMHA[1], VASUDEVAREDDY NAGAVELLI[1]*, PRIYANKA BOLLEPELLI[2] and MUTHENENI SRINIVASA RAO[2]

[1]*Department of Chemistry, Kakatiya University, Warangal-506009, India and* [2]*Chemical Biology Laboratory, Indian Institute of Chemical Technology, Hyderabad-500007, India*

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ANALYTICAL AND SPECTRAL DATA OF THE SYNTHESIZED COMPOUNDS

*4-(Prop-2-yn-1-yl)thiomorpholine (**2**)*. Yellow oil; ^{1}H-NMR (500 MHz, $CDCl_3$, δ / ppm): 3.31 (2H, *d*, *J* = 2.4 Hz), 2.84–2.79 (8H, *m*), 2.26 (1H, *t*, *J* = = 2.4 Hz); ESI-MS (*m*/*z*): 142 (M+H).

*4-(Prop-2-yn-1-yl)thiomorpholine 1,1-dioxide (**3**)*. M.p.: 114–116 °C, ESI--MS (*m*/*z*): 174 (M+H).

*4-((1-Heptyl-1*H*-1,2,3-triazol-4-yl)methyl)thiomorpholine (**4a**)*. Yield: 75 %; yellow solid; m.p.: 48–50 °C; R_f (65 % ethyl acetate/*n*-hexane): 0.40; IR (KBr, cm^{-1}) 3019 (triazole ring), 1402, 1215, 1052, 757, 668; ^{1}H-NMR (500 MHz, $CDCl_3$, δ / ppm): 7.76 (1H, *s*, tri-H), 4.35 (2H, *t*, *J* = 7.32 Hz, N–N–CH_2–), 4.03 (2H, *s*, N–CH_2-tri), 3.20–3.10 (4H, *m*), 2.90–2.78 (4H, m), 1.90–1.80 (2H, *m*), 1.40–1.20 (8H, *m*), 0.87 (3H, *t*, *J* = 6.71 Hz); ^{13}C-NMR (125 MHz, $CDCl_3$, δ / ppm): 139.4, 124.4, 53.2, 51.9, 50.3, 31.2 , 29.9, 28.3, 26.1, 25.8, 22.2, 13.7; ESI-MS (*m*/*z*): 283 (M+H).

*4-((1-Octyl-1*H*-1,2,3-triazol-4-yl)methyl)thiomorpholine (**4b**)*. Yield: 78 %; yellow solid; m.p.: 51–53 °C; R_f (65 vol.% ethyl acetate/*n*-hexane): 0.40; IR (KBr, cm^{-1}): 3019 (triazole ring), 2399, 1637, 1403, 1215, 1051, 928, 758, 669; ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 7.44 (1H, *s*, tri-H), 4.30 (2H, *t*, *J*= 7.74 Hz, N–N–CH_2–), 3.68 (2H, *s*, N–CH_2-tri), 2.80–2.62 (8H, *m*), 1.90–1.80 (2H, *m*), 1.40–1.20 (10H, *m*), 0.84 (3H, *t*, *J* = 7.17 Hz); ^{13}C-NMR (125 MHz, $CDCl_3$ δ / ppm): 143.8, 122.3, 54.5, 54.0, 50.2, 31.6, 30.2, 28.9, 28.8, 27.7, 26.4, 22.5, 13.9; ESI-MS (*m*/*z*): 297 (M+H).

*4-((1-Decyl-1*H*-1,2,3-triazol-4-yl)methyl)thiomorpholine (**4c**)*. Yield: 68 %; pale yellow solid; m.p.: 55–57 °C; R_f (65 vol. % ethyl acetate/*n*-hexane): 0.38; IR

* Corresponding author. E-mail: vasujac3@gmail.com

(KBr, cm^{-1}): 3019 (triazole ring), 2928, 2399, 1654, 1522, 1420, 1215, 1051, 928, 758, 669; ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 7.52 (1H, *s*, tri-H), 4.31 (2H, *t*, *J* = 7.17 Hz, N–N–CH_2–), 3.74 (2H, *s*, N–CH_2-tri), 2.80–2.60 (8H, *m*), 1.98–1.80 (2H, *m*), 1.40–1.20 (14H, *m*), 0.85 (3H, *t*, *J* = 6.98 Hz); ^{13}C-NMR (125 MHz, $CDCl_3$, δ / ppm): 143.0, 122.8, 54.4, 53.8, 50.3, 31.7, 30.2, 29.3, 29.3, 29.1, 28.9, 27.4, 26.4, 22.5, 14.0; ESI-MS (*m*/*z*): 325 (M+H).

*4-((1-Tridecyl-1*H*-1,2,3-triazol-4-yl)methyl)thiomorpholine (**4d**)*. Yield: 81 %; white solid; m.p.: 58–60 °C; R_f (65 vol. % ethyl acetate/*n*-hexane): 0.38; IR (KBr, cm^{-1}): 3021 (triazole ring), 2924, 2853, 1639, 1559, 1405, 1215, 1049, 928, 759, 669; ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 7.53 (1H, *s*, tri-H), 4.33 (2H, *t*, *J* = 7.55 Hz, N–N–CH_2–), 3.77 (2H, *s*, N–CH_2-tri), 2.95–2.60 (8H, *m*), 1.98–1.80 (2H, *m*), 1.40.–1.18 (20H, *m*), 0.87 (3H, *t*, *J* = 6.79 Hz); ^{13}C-NMR (125 MHz, $CDCl_3$, δ / ppm): 143.0, 122.8, 54.0, 53.3, 50.3, 31.7, 30.0, 29.4, 29.3, 29.2, 29.1, 28.8, 27.7, 26.3, 22.5, 13.9; ESI-MS (*m*/*z*): 367 (M+H).

*4-((1-Tetradecyl-1*H*-1,2,3-triazol-4-yl)methyl)thiomorpholine (**4e**)*. Yield: 76 %; off-white solid; m.p.: 61–63 °C; R_f (65 vol. % ethyl acetate/*n*-hexane): 0.38; IR (KBr, cm^{-1}): 3019 (triazole ring), 2928, 2400, 1666, 1520, 1403, 1215, 1035, 928, 757, 669; ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 7.50 (1H, *s*, tri-H), 4.31 (2H, *t*, *J* = 7.16 Hz, N–N–CH_2–), 3.72 (2H, *s*, N–CH_2-tri), 2.85–2.65 (8H, *m*), 1.95–1.80 (2H, *m*), 1.41.–1.18 (22H, m), 0.86 (3H, *t*, *J* = 6.98 Hz); ^{13}C-NMR (125 MHz, $CDCl_3$, δ / ppm): 143.4, 122.6, 54.5, 53.9 , 50.3, 31.8 , 30.2, 29.6, 29.5, 29.5, 29.4, 29.3, 29.2, 28.9, 27.6, 26.4, 22.6, 14.0; ESI-MS (*m*/*z*): 381 (M+H).

*4-((1-Pentadecyl-1*H*-1,2,3-triazol-4-yl)methyl)thiomorpholine (**4f**)*. Yield: 84 %; off-white solid; m.p.: 65–67 °C; R_f (65 vol. % ethyl acetate /*n*-hexane): 0.37; IR (KBr, cm^{-1}): 3019 (triazole ring), 2927, 2855, 1403, 1215, 1051, 759, 668; ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 7.60 (1H, *s*, tri-H), 4.34 (2H, *t*, *J* = 7.55 Hz, N–N–CH_2–), 3.86 (2H, *s*, N–CH_2-tri), 3.05–2.62 (8H, *m*), 1.98–1.80 (2H, *m*), 1.40–1.18 (24H, *m*), 0.87 (3H, *t*, *J* = 6.79 Hz); ^{13}C-NMR (125 MHz, $CDCl_3$, δ / ppm): 143.0, 123.0, 54.4, 53.7, 50.5, 32.0, 30.3, 29.7, 29.6, 29.5, 29.4, 29.4, 29.0, 27.6, 26.6, 22.7, 14.2; ESI-MS (*m*/*z*): 395 (M+H).

*4-((1-Heptadecyl-1*H*-1,2,3-triazol-4-yl)methyl)thiomorpholine (**4g**)*. Yield: 74 %; off-white solid; m.p.: 68–70 °C; R_f (65 vol. % ethyl acetate/*n*-hexane): 0.37; IR (KBr, cm^{-1}): 3020 (triazole ring), 1639, 1405, 1216, 1038, 759, 668 ; ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 7.65 (1H, *s*, tri-H), 4.34 (2H, *t*, *J* = 7.17 Hz, N–N–CH_2–), 3.93 (2H, *s*, N–CH_2-tri), 3.05–2.80 (8H, *m*), 1.91–1.72 (2H, *m*), 1.48–1.10 (28H, *m*), 0.87 (3H, *t*, *J* = 6.60 Hz); ^{13}C-NMR (125 MHz, $CDCl_3$, δ / ppm): 141.0, 123.9, 53.9, 53.5, 50.4, 31.8, 30.1, 29.5, 29.4, 29.3, 29.2, 28.9, 27.5, 26.6, 26.4, 22.6, 21.0, 14.0; ESI-MS (*m*/*z*): 423 (M+H).

*4-((1-Hexyl-1*H*-1,2,3-triazol-4-yl)methyl)thiomorpholine (**4h**)*. Yield: 75 %; yellow oil; R_f (65 vol. % ethyl acetate/*n*-hexane): 0.40; IR (KBr, cm^{-1}): 3019

(triazole ring), 1640, 1561, 1404, 928, 757, 668; ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 7.47 (1H, *s*, tri-H), 4.33 (2H, *t*, *J* = 7.74 Hz, N–N–CH_2–), 3.71 (2H, *s*, N–CH_2-tri), 2.82–2.64 (8H, *m*), 1.98–1.80 (2H, *m*), 1.40–1.20 (6H, *m*), 0.87 (3H, *t*, *J* = 7.17 Hz); ^{13}C-NMR (125 MHz, $CDCl_3$, δ / ppm): 139.4, 124.4, 53.2, 51.9, 50.3, 31.2, 29.9, 28.3, 26.19, 22.2, 13.7; ESI-MS (*m*/*z*): 269 (M+H).

*Ethyl 2-(4-(thiomorpholinomethyl)-1*H*-1,2,3-triazol-1-yl)acetate* (***4i***). Yield: 75 %; pale yellow oil; R_f (65 vol. % ethyl acetate/*n*-hexane): 0.36; IR (KBr, cm^{-1}): 3019 (triazole ring), 1713, 1402, 1215, 1036, 928, 757, 669; ^{1}H-NMR (500 MHz, $CDCl_3$, δ / ppm): 7.79 (1H, *s*, tri-H), 5.13 (2H, *s*, N–N–CH_2–CO–), 4.22 (2H, *q*, *J* = 7.09 and 7.09 Hz, O–CH_2–), 3.91 (2H, *s*, N–CH_2-tri), 3.01–2.91 (4H, *m*), 2.90–2.80 (4H, *m*), 1.25 (3H, *t*, *J* = 7.09 Hz); ^{13}C-NMR (75 MHz, $CDCl_3$, δ / ppm): 165.9, 140.6, 126.1, 62.0, 53.2, 51.8, 50.6, 26.0, 13.6; ESI-MS (*m*/*z*): 271 (M+H).

*4-((1-Dodecyl-1*H*-1,2,3-triazol-4-yl)methyl)thiomorpholine* (***4j***). Yield: 79 %; off-white solid; m.p.: 54–56 °C; R_f (65 vol. % ethyl acetate/*n*-hexane): 0.38; IR (KBr, cm^{-1}): 3019 (triazole ring), 2928, 2400, 1666, 1520, 1403, 1215, 1035, 928, 757, 669; ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 7.52 (1H, *s*, tri-H), 4.33 (2H, *t*, *J* = 7.36 Hz, N–N–CH_2–), 3.74 (2H, *s*, N–CH_2-tri), 2.82–2.64 (8H, *m*), 1.97–1.80 (2H, *m*),1.48–1.18 (18H, *m*), 0.87 (3H, *t*, *J* = 6.98 Hz); ^{13}C-NMR (125 MHz, $CDCl_3$, δ / ppm): 143.2, 122.7, 54.3, 53.5, 50.4, 31.8, 30.2, 29.5, 29.4, 29.3, 29.2, 28.9, 27.8, 27.6, 26.4, 22.6, 14.0; ESI-MS (*m*/*z*): 353 (M+H).

*4-((1-Heptyl-1*H*-1,2,3-triazol-4-yl)methyl)thiomorpholine 1,1-dioxide* (***5a***). Yield: 75 %; off-white solid; m.p.: 60–62 °C; R_f (70 vol. % ethyl acetate/*n*-hexane); 0.38; IR (KBr, cm^{-1}): 3018 (triazole ring), 1412, 1218, 1050, 750, 666; ^{1}H-NMR (500 MHz, $CDCl_3$, δ / ppm): 7.79 (1H, *s*, tri-H), 4.36 (2H, *t*, *J* = 7.32 Hz, N–N–CH_2–),4.05 (2H, *s*, N–CH_2-tri), 3.11–3.06 (4H, *m*), 2.86–2.81 (4H, *m*), 1.97–1.82 (2H, *m*), 1.48–1.22 (8H, *m*), 0.87 (3H, *t*, *J* = 6.98 Hz); ESI-MS (*m*/*z*): 315 (M+H).

*4-((1-Octyl-1*H*-1,2,3-triazol-4-yl)methyl)thiomorpholine 1,1-dioxide* (***5b***). Yield: 78 %; white solid; m.p.: 61–63 °C; R_f (70 vol. % ethyl acetate/*n*-hexane): 0.38; IR (KBr, cm^{-1}): 3030 (triazole ring), 2412, 1638, 1413, 1221; ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 7.50 (1H, *s*, tri-H), 4.33 (2H, *t*, *J* = 7.74 Hz, N–N––CH_2–), 3.72 (2H, *s*, N–CH_2-tri), 3.09–3.04 (4H, *m*), 2.88–2.81 (4H, *m*), 1.98––1.80 (2H, *m*), 1.49–1.22 (10H, *m*), 0.87 (3H, *t*, *J* = 7.09 Hz); ESI-MS (*m*/*z*): 329 (M+H).

*4-((1-Decyl-1*H*-1,2,3-triazol-4-yl)methyl)thiomorpholine 1,1-dioxide* (***5c***). Yield: 68 %; pale yellow solid; m.p.: 64–66 °C; R_f (70 vol. % ethyl acetate/*n*--hexane): 0.38; IR (KBr, cm^{-1}): 3033 (triazole ring), 2927, 2403, 1652, 1518, 1426, 1217; ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 7.56 (1H, *s*, tri-H), 4.33 (2H, *t*, *J* = 7.17 Hz, N–N–CH_2–), 3.75 (2H, *s*, N–CH_2-tri), 3.10–3.04 (4H, *m*), 2.87–

–2.83 (4H, *m*), 1.20–1.81 (2H, *m*), 1.46–1.22 (14H, *m*), 0.86 (3H, *t*, *J* = 7.55 Hz); ESI-MS (*m*/*z*): 357 (M+H).

*4-((1-Tridecyl-1*H*-1,2,3-triazol-4-yl)methyl)thiomorpholine 1,1-dioxide (**5d**)*. Yield: 61 %; pale yellow solid; m.p.: 68–70 °C; R_f (70 vol. % ethyl acetate/*n*-hexane): 0.40; IR (KBr, cm^{-1}): 3026 (triazole ring), 2918, 2857, 1640, 1537, 1415, 1216; ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 7.56 (1H, *s*, tri-H), 4.33 (2H, *t*, *J* = 7.74 Hz, N–N–CH_2–), 3.79 (2H, *s*, N–CH_2-tri), 3.10–3.04 (4H, *m*), 2.88–2.81 (4H, *m*), 1.96–1.81 (2H, *m*), 1.45–1.16 (20H, *m*), 0.86 (3H, *t*, *J* = 6.60 Hz); ESI-MS (*m*/*z*): 399 (M+H).

*4-((1-Tetradecyl-1*H*-1,2,3-triazol-4-yl)methyl)thiomorpholine 1,1-dioxide (**5e**)*. Yield: 66 %; off-white solid; m.p.: 69–72 °C; R_f (70 vol. % ethyl acetate/*n*-hexane): 0.39; IR (KBr, cm^{-1}): 3037 (triazole ring), 2941, 2388, 1668, 1534, 1417, 1215; ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 7.56 (1H, *s*, tri-H), 4.36 (2H, *t*, *J* = 7.55 Hz, N–N–CH_2–), 3.74 (2H, *s*, N–CH_2-tri), 3.11–3.05 (4H, *m*), 2.87–2.80 (4H, *m*), 1.98–1.84 (2H, *m*), 1.47–1.20 (22H, *m*), 0.88 (3H, *t*, *J* = 6.98 Hz); ESI-MS (*m*/*z*): 413 (M+H).

*4-((1-Pentadecyl-1*H*-1,2,3-triazol-4-yl)methyl)thiomorpholine 1,1-dioxide (**5f**)*. Yield: 64 %; pale yellow solid; m.p.: 77–79 °C; R_f (70 vol. % ethyl acetate/*n*-hexane): 0.37; IR (KBr, cm^{-1}): 3028 (triazole ring), 2920, 2860,1413, 1218; ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 7.65 (1H, *s*, tri-H), 4.36 (2H, *t*, *J* = = 7.17 Hz, N–N–CH_2–), 3.88 (2H, *s*, N–CH_2-tri), 3.10–3.05 (4H, *m*), 2.86–2.80 (4H, *m*), 1.99–1.82 (2H, *m*), 1.48–1.19 (24H, *m*), 0.86 (3H, *t*, *J* = 6.60 Hz); ESI-MS (*m*/*z*): 427 (M+H).

*4-((1-Heptadecyl-1*H*-1,2,3-triazol-4-yl)methyl)thiomorpholine 1,1-dioxide (**5g**)*. Yield: 74 %; off-white solid; m.p.: 73–75 °C; R_f (70 vol. % ethyl acetate/*n*-hexane): 0.38; IR (KBr, cm^{-1}): 3020 (triazole ring), 1639, 1405, 1216; ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 7.70 (1H, *s*, tri-H), 4.37 (2H, *t*, *J* = 7.74 Hz, N–N–CH_2–), 3.94 (2H, *s*, N–CH_2-tri), 3.12–3.06 (4H, *m*), 2.88–2.81 (4H, *m*), 1.94–1.76 (2H, *m*), 1.52–1.18 (28H, *m*), 0.87 (3H, *t*, *J* = 6.79 Hz); ESI-MS (*m*/*z*): 455 (M+H).

*4-((1-Hexyl-1*H*-1,2,3-triazol-4-yl)methyl)thiomorpholine 1,1-dioxide (**5h**)*. Yield: 70 %; yellow solid; m.p.: 68–70 °C; R_f (70 vol. % ethyl acetate/*n*-hexane): 0.36; IR (KBr, cm^{-1}): 3019 (triazole ring), 1644, 1567, 1414; ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 7.49 (1H, *s*, tri-H), 4.38 (2H, *t*, *J* = 7.55 Hz, N–N–CH_2–), 3.74 (2H, *s*, N–CH_2-tri), 3.11–3.05 (4H, *m*), 2.86–2.80 (4H, *m*), 1.98–1.85 (2H, *m*), 1.45–1.22 (6H, *m*), 0.86 (3H, *t*, *J* = 6.98 Hz); ESI-MS (*m*/*z*): 301 (M+H).

*Ethyl 2-(4-((1,1-dioxidothiomorpholino)methyl)-1*H*-1,2,3-triazol-1-yl)acetate (**5i**)*. Yield: 71 %; yellow oil; R_f (70 vol. % ethyl acetate/*n*-hexane): 0.39; IR (KBr, cm^{-1}): 3018 (triazole ring), 1715, 1412, 1218, 1033; ^{1}H-NMR (500 MHz, $CDCl_3$, δ / ppm): 7.80 (1H, *s*, tri-H), 5.14 (2H, *s*, N–N–CH_2–CO–), 4.25 (2H, *q*, *J* = 7.09 Hz, O–CH_2–), 3.94 (2H, *s*, N–CH_2-tri), 3.12–3.05 (4H, *m*), 2.88–2.81 (4H, *m*), 1.27 (3H, *t*, *J* = 7.09 Hz); ESI-MS (*m*/*z*): 303 (M+H).

*4-((1-Dodecyl-1*H*-1,2,3-triazol-4-yl)methyl)thiomorpholine 1,1-dioxide (**5j**)*. Yield: 67 %; white solid; m.p.: 64–66 °C; R_f (70 vol. % ethyl acetate/*n*-hexane): 0.37; IR (KBr, cm^{-1}): 3020 (triazole ring), 2929, 2418, 1669, 1522, 1413, 1218, 1045; ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 7.54 (1H, *s*, tri-H), 4.34 (2H, *t*, *J* = = 7.36 Hz, N–N–CH_2–), 3.75 (2H, *s*, N–CH_2-tri), 3.10–3.05 (4H, *m*), 2.86–2.80 (4H, *m*), 1.96–1.84 (2H, *m*),1.44–1.16 (18H, *m*), 0.86 (3H, *t*, *J* = 7.17 Hz); ESI--MS (*m*/*z*): 385 (M+H).

TABLE S-I. *In vitro* antibacterial activity data for compounds **4a**–**j** and **5a**–**j** as *MIC* / μg mL^{-1}

Compound	*B. subtilis*	*S. aureus*	*S. epidermidis*	*E. coli*	*P. aeruginosa*	*K. pneumoniae*
4a	>150	75	2.34	>150	2.34	9.37
4b	>150	2.34	1.17	>150	>150	2.34
4c	>150	>150	2.34	>150	>150	>150
4d	>150	>150	>150	>150	>150	>150
4e	>150	>150	>150	>150	>150	>150
4f	>150	>150	>150	>150	>150	>150
4g	>150	>150	1.17	>150	>150	4.68
4h	>150	>150	>150	>150	>150	>150
4i	>150	>150	>150	>150	>150	>150
4j	>150	>150	>150	>150	>150	>150
5a	>150	2.34	2.34	>150	9.37	>150
5b	2.34	4.68	>150	>150	>150	>150
5c	>150	>150	>150	>150	>150	>150
5d	>150	>150	>150	>150	4.68	>150
5e	9.37	75	>150	>150	>150	>150
5f	>150	>150	>150	>150	>150	>150
5g	>150	>150	>150	>150	>150	>150
5h	>150	>150	>150	>150	>150	>150
5i	>150	>150	>150	>150	>150	>150
5j	2.34	>150	9.37	>150	>150	>150
Penicillin	1.56	1.56	3.12	12.5	12.5	6.25
Streptomycin	6.25	6.25	3.12	6.25	1.56	3.12

TABLE S-II. *In vitro* antifungal activity data for compounds **4a**–**j** and **5a**–**j** as zone of inhibition (mm) measured at 100 and 150 μg mL^{-1}

Compound	*C. albicans*		*S. cerevisiae*		*A. niger*		*A. flavus*	
	100 μg	150 μg	100 μg	150 μg	100 μg	150μg	100 μg	150 μg
4a	0	0	0	0	0	0	0	0
4b	0	0	0	0	0	0	0	0
4c	10	13	0	0	10	14	9	12
4d	0	0	0	0	0	0	0	0
4e	9	12	0	0	15	16	10	13
4f	8	11	0	0	12	14	0	0
4g	0	0	0	0	0	0	0	0
4h	0	0	0	0	0	0	0	0
4i	0	0	0	0	0	0	0	0

TABLE S-II. Continued

Compound	*C. albicans*		*S. cerevisiae*		*A. niger*		*A. flavus*	
	100 µg	150 µg	100 µg	150 µg	100 µg	150µg	100 µg	150 µg
4j	10	13	0	0	10	14	0	0
5a	0	0	0	0	0	0	0	0
5b	0	0	0	0	0	0	0	0
5c	8	10	0	0	10	12	0	0
5d	10	12	0	0	10	13	0	0
5e	0	0	0	0	0	0	0	0
5f	0	0	0	0	0	0	0	0
5g	11	13	0	0	0	0	8	11
5h	0	0	0	0	0	0	0	0
5i	0	0	0	0	0	0	0	0
5j	10	14	0	0	12	15	10	13
Amphotericin B	23.5		22		25		25	