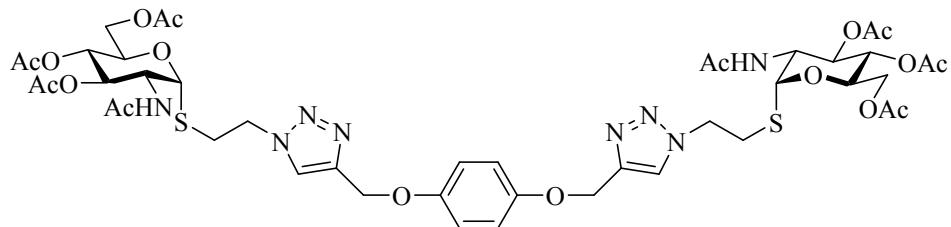


**Analytical data for intermediates not included in the main text.**

**1,4-Di[1-(ethyl 2-acetamido-3,4,6-tri-O-acetyl-2-deoxy-1-thio- $\alpha$ -D-glucopyranosyl)-1,2,3-triazol-4-ylmethoxy]benzene**



<sup>1</sup>H NMR (500 MHz, CDCl<sub>3</sub>) δ 7.65 (s, 2H, CCH, triazole), 6.92 (s, 4H, Ar-H), 5.83 (d, *J* = 8.0 Hz, 2H, NH), 5.57 (d, *J* = 5.4 Hz, 2H, H-1), 5.17 (s, 4H, CH<sub>2</sub>OAr), 5.12 (t, *J* = 9.6 Hz, 2H, H-4), 5.02 (dd, *J* = 11.1, 9.3 Hz, 2H, H-3), 4.59 (t, *J* = 6.7 Hz, 4H, SCH<sub>2</sub>CH<sub>2</sub>triazole), 4.46 (ddd, *J* = 11.1, 7.9, 5.5 Hz, 2H, H-2), 4.30 (ddd, *J* = 10.0, 4.9, 2.1 Hz, 2H, H-5), 4.26 (dd, *J* = 12.3, 4.8 Hz, 2H, H-6a), 4.12 (dd, *J* = 12.3, 2.1 Hz, 2H, H-6b), 3.18 (dt, *J* = 13.6, 6.7 Hz, 2H, SCH<sub>2</sub>CH<sub>2</sub>triazole), 3.09 (dt, *J* = 13.9, 6.8 Hz, 2H, SCH<sub>2</sub>CH<sub>2</sub>triazole), 2.06 (s, 6H), 2.04 (s, 6H), 2.04 (s, 6H) (each OAc), 1.97 (s, 6H, NHAc).

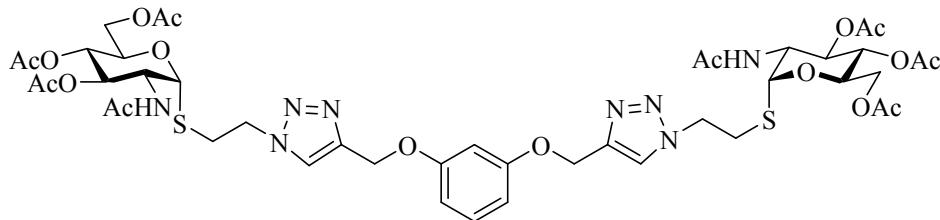
<sup>13</sup>C NMR (126 MHz, CDCl<sub>3</sub>) δ 172.87, 171.77, 170.52, 170.18 (each C=O), 152.75 (Ar-C), 144.55 (CCH, triazole), 122.96 (CCH, triazole), 115.88 (Ar-CH), 84.64 (C-1), 70.99 (C-3), 68.76 (C-5), 67.93 (C-4), 62.66 (CH<sub>2</sub>OAr), 62.01 (C-6), 52.77 (C-2), 49.50 (SCH<sub>2</sub>CH<sub>2</sub>triazole), 31.46 (SCH<sub>2</sub>CH<sub>2</sub>triazole), 23.18 (NHAc), 20.70, 20.69, 20.58 (each OAc).

ES-HRMS calcd for C<sub>44</sub>H<sub>58</sub>N<sub>8</sub>O<sub>18</sub>S<sub>2</sub>Na<sub>1</sub> 1073.3208, found m/z 1073.3203 [M+Na]<sup>+</sup>

IR (ATR) cm<sup>-1</sup>: 3278, 1744, 1635, 1547, 1376, 1228, 1085, 1043, 1027, 800

*R*<sub>f</sub>: 0.47 (2:23 MeOH-CH<sub>2</sub>Cl<sub>2</sub>)

**1,3-Di[1-(ethyl 2-acetamido-3,4,6-tri-O-acetyl-2-deoxy-1-thio- $\alpha$ -D-glucopyranosyl)-1,2,3-triazol-4-ylmethoxy]benzene**



<sup>1</sup>H NMR (500 MHz, CDCl<sub>3</sub>) δ 7.68 (s, 2H, CCH, triazole), 7.23 – 7.17 (m, 1H, Ar-H), 6.65 – 6.59 (m, 3H, Ar-H), 5.88 (d, *J* = 8.0 Hz, 2H, NH), 5.58 (d, *J* = 5.4 Hz, 2H, H-1), 5.20 (s, 4H, CH<sub>2</sub>OAr), 5.11 (t, *J* = 9.6 Hz, 2H, H-4), 5.02 (dd, *J* = 11.1, 9.3 Hz, 2H, H-3), 4.59 (t, *J* = 6.7 Hz, 4H, SCH<sub>2</sub>CH<sub>2</sub>triazole), 4.46 (ddd, *J* = 11.1, 8.0, 5.4 Hz, 2H, H-2), 4.30 (ddd, *J* = 9.9, 4.9, 2.2 Hz, 2H, H-5), 4.25 (dd, *J* = 12.3, 4.8 Hz, 2H, H-6a), 4.12 (dd, *J* = 12.3, 2.2 Hz, 2H, H-6b), 3.18 (dt, *J* = 13.6, 6.7 Hz, 2H, SCH<sub>2</sub>CH<sub>2</sub>triazole), 3.09 (dt, *J* = 14.0, 6.8 Hz, 2H, SCH<sub>2</sub>CH<sub>2</sub>triazole), 2.06 (s, 6H), 2.04 (s, 6H), 2.04 (s, 6H) (each OAc), 1.97 (s, 6H, NHAc).

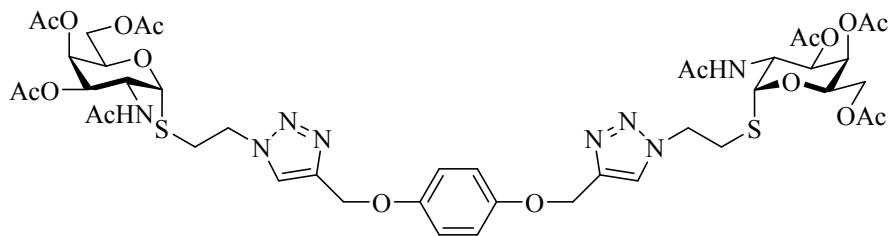
<sup>13</sup>C NMR (126 MHz, CDCl<sub>3</sub>) δ 171.72, 170.52, 170.20, 169.24 (each C=O), 159.37 (Ar-C), 144.26 (CCH, triazole), 130.13 (Ar-CH) 123.05 (CCH, triazole), 107.78 (Ar-CH), 102.13 (Ar-CH), 84.63 (C-1), 70.96 (C-3), 68.75 (C-5), 67.98 (C-4), 62.07 (CH<sub>2</sub>OAr), 62.01 (C-6), 52.75 (C-2), 49.52 (SCH<sub>2</sub>CH<sub>2</sub>triazole), 31.44 (SCH<sub>2</sub>CH<sub>2</sub>triazole), 23.18 (NHAc), 20.70, 20.68, 20.58 (each OAc).

ES-HRMS calcd for C<sub>44</sub>H<sub>58</sub>N<sub>8</sub>O<sub>18</sub>S<sub>2</sub>Na<sub>1</sub> 1073.3208, found m/z 1073.3237 [M+Na]<sup>+</sup>

IR (ATR) cm<sup>-1</sup>: 3286, 1742, 1540, 1369, 1227, 1150, 1086, 1039, 734

*R*<sub>f</sub> 0.47 (2:23 MeOH-CH<sub>2</sub>Cl<sub>2</sub>)

**1,4-Di[1-(ethyl 2-acetamido-3,4,6-tri-O-acetyl-2-deoxy-1-thio- $\alpha$ -D-galactopyranosyl)-1,2,3-triazol-4-ylmethoxy]benzene**



<sup>1</sup>H NMR (500 MHz, CDCl<sub>3</sub>) δ 7.66 (s, 2H, CCH, triazole), 6.90 (s, 4H, Ar-H), 5.75 (d, *J* = 8.1 Hz, 2H, NH), 5.65 (d, *J* = 5.3 Hz, 2H, H-1), 5.38 (dd, *J* = 3.4, 1.3 Hz, 2H, H-4), 5.18 (s, 4H, CH<sub>2</sub>OAr), 5.00 (dd, *J* = 11.8, 3.2 Hz, 2H, H-3), 4.73 (ddd, *J* = 11.8, 8.0, 5.3 Hz, 2H, H-2), 4.61 (dt, *J* = 13.7, 6.8 Hz, 2H, SCH<sub>2</sub>CH<sub>2</sub>triazole), 4.55 (dt, *J* = 13.8, 6.8 Hz, 2H, SCH<sub>2</sub>CH<sub>2</sub>triazole), 4.47 (td, *J* = 6.1, 1.2 Hz, 2H, H-5), 4.11 (dd, *J* = 6.3, 2.2 Hz, 4H, H-6a, H-6b), 3.18 (dt, *J* = 13.7, 6.8 Hz, 2H, SCH<sub>2</sub>CH<sub>2</sub>triazole), 3.06 (dt, *J* = 13.9, 6.7 Hz, 2H, SCH<sub>2</sub>CH<sub>2</sub>triazole), 2.16 (s, 6H), 2.01 (s, 6H), 1.99 (s, 6H) (each OAc), 1.98 (s, 6H, NHAc).

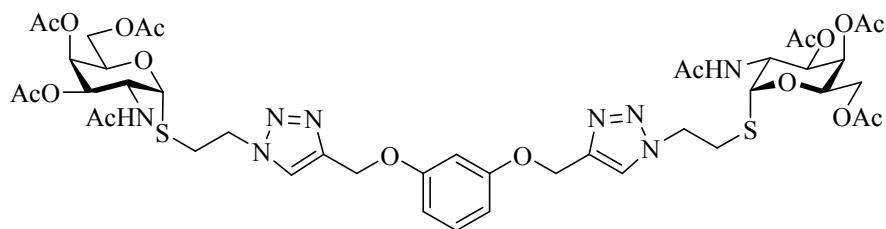
<sup>13</sup>C NMR (126 MHz, CDCl<sub>3</sub>) δ 171.03, 170.42, 170.35, 170.11 (each C=O), 152.67 (Ar-C), 144.46 (CCH, triazole), 123.11 (CCH, triazole), 115.99 (Ar-CH), 85.22 (C-1), 68.16 (C-3), 67.66 (C-5), 67.11 (C-4), 62.65 (CH<sub>2</sub>OAr), 62.03 (C-6), 49.67 (SCH<sub>2</sub>CH<sub>2</sub>triazole), 48.60 (C-2), 31.32 (SCH<sub>2</sub>CH<sub>2</sub>triazole), 23.25 (NHAc), 20.72, 20.66, 20.63 (each OAc).

ES-HRMS calcd for C<sub>44</sub>H<sub>58</sub>N<sub>8</sub>O<sub>18</sub>S<sub>2</sub>Na<sub>1</sub> 1073.3208, found m/z 1073.3217 [M+Na]<sup>+</sup>

IR (ATR) cm<sup>-1</sup>: 3279, 1747, 1541, 1507, 1373, 1229, 1083, 1047, 1024, 828

*R*<sub>f</sub> 0.47 (2:23 MeOH-CH<sub>2</sub>Cl<sub>2</sub>)

**1,3-Di[1-(ethyl 2-acetamido-3,4,6-tri-O-acetyl-2-deoxy-1-thio- $\alpha$ -D-galactopyranosyl)-1,2,3-triazol-4-ylmethoxy]benzene**



<sup>1</sup>H NMR (500 MHz, CDCl<sub>3</sub>) δ 7.70 (s, 2H, CCH, triazole), 7.18 (t, *J* = 8.2 Hz, 1H, Ar-H), 6.62 (dd, *J* = 8.2, 2.3 Hz, 2H, Ar-H), 6.58 (t, *J* = 2.3 Hz, 1H, Ar-H), 5.96 (d, *J* = 8.0 Hz, 2H, NH), 5.67 (d, *J* = 5.4 Hz, 2H, H-1), 5.38 (dd, *J* = 3.3, 1.3 Hz, 2H, H-4), 5.21 (s, 4H, CH<sub>2</sub>OAr), 4.99 (dd, *J* = 11.8, 3.2 Hz, 2H, H-3), 4.73 (ddd, *J* = 11.8, 8.0, 5.3 Hz, 2H, H-2), 4.65 – 4.53 (m, 4H, SCH<sub>2</sub>CH<sub>2</sub>triazole), 4.45 (td, *J* = 6.4, 1.5 Hz, 2H, H-5), 4.10 (dd, *J* = 6.3, 1.8 Hz, 4H, H-6a, H-6b), 3.18 (dt, *J* = 13.6, 6.7 Hz, 2H, SCH<sub>2</sub>CH<sub>2</sub>triazole), 3.07 (dt, *J* = 13.8, 6.7 Hz, 2H, SCH<sub>2</sub>CH<sub>2</sub>triazole), 2.16 (s, 6H), 2.01 (s, 6H), 1.98 (s, 6H) (each OAc), 1.98 (s, 6H, NHAc).

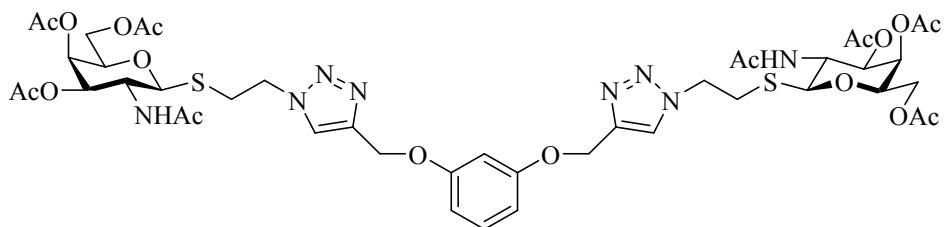
<sup>13</sup>C NMR (126 MHz, CDCl<sub>3</sub>) δ 170.96, 170.53, 170.35, 170.12 (each C=O), 159.28 (Ar-C), 144.16 (CCH, triazole), 130.11 (Ar-CH), 123.27 (CCH, triazole), 108.17 (Ar-CH), 102.03 (Ar-CH), 85.24 (C-1), 68.14 (C-3), 67.61 (C-5), 67.11 (C-4), 62.09 (C-6), 62.09 (CH<sub>2</sub>OAr), 49.67 (SCH<sub>2</sub>CH<sub>2</sub>triazole), 48.53 (C-2), 31.38 (SCH<sub>2</sub>CH<sub>2</sub>triazole), 23.22 (NHAc), 20.73, 20.66, 20.62 (each OAc).

ES-HRMS calcd for C<sub>44</sub>H<sub>57</sub>N<sub>8</sub>O<sub>18</sub>S<sub>2</sub>, found m/z 1049.3232 [M-H]<sup>-</sup>

IR (ATR) cm<sup>-1</sup>: 1745, 1664, 1542, 1370, 1227, 1152, 1083, 1050, 1033, 735

*R*<sub>f</sub> 0.52 (2:23 MeOH-CH<sub>2</sub>Cl<sub>2</sub>)

**1,3-Di[1-(ethyl 2-acetamido-3,4,6-tri-O-acetyl-2-deoxy-1-thio- $\beta$ -D-galactopyranosyl)-1,2,3-triazol-4-ylmethoxy]benzene**



<sup>1</sup>H NMR (500 MHz, CDCl<sub>3</sub>) δ 7.78 (s, 2H, CCH, triazole), 7.20 (t, *J* = 8.1 Hz, 1H, Ar-H), 6.63 (dd, *J* = 8.2, 2.3 Hz, 2H, Ar-H), 6.60 (t, *J* = 2.3 Hz, 1H, Ar-H), 5.93 (d, *J* = 9.3 Hz, 2H, NH), 5.38 (dd, *J* = 3.3, 1.1 Hz, 2H, H-4), 5.20 (s, 4H, ArOCH<sub>2</sub>), 5.04 (dd, *J* = 10.6, 3.3 Hz, 2H, H-3), 4.72 (dt, *J* = 14.0, 6.2 Hz, 2H, SCH<sub>2</sub>CH<sub>2</sub>triazole), 4.57 (dt, *J* = 13.8, 6.8 Hz, 2H, SCH<sub>2</sub>CH<sub>2</sub>triazole), 4.34 (d, *J* = 10.4 Hz, 2H, H-1), 4.27 (q, *J* = 10.4 Hz, 2H, H-2), 4.13 – 4.07 (m, 4H, H-6a, H-6b), 3.86 (td, *J* = 6.4, 1.2 Hz, 2H, H-5), 3.33 (dt, *J* = 13.8, 6.7 Hz, 2H, SCH<sub>2</sub>CH<sub>2</sub>triazole), 3.09 (dt, *J* = 14.5, 6.2 Hz, 2H, SCH<sub>2</sub>CH<sub>2</sub>triazole), 2.16 (s, 6H), 2.02 (s, 6H), 1.99 (s, 6H) (each OAc), 1.93 (s, 6H, NHAc).

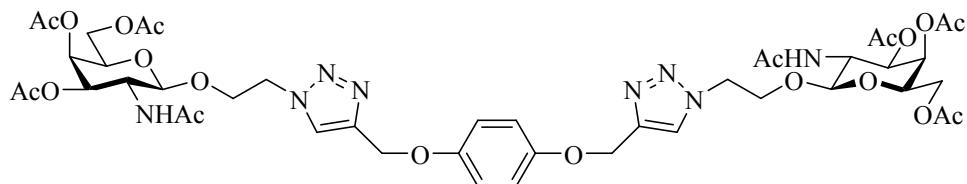
<sup>13</sup>C NMR (126 MHz, CDCl<sub>3</sub>) δ 170.59, 170.52, 170.44, 170.20 (each C=O), 159.28 (Ar-C), 143.57 (CCH, triazole), 130.26 (Ar-CH), 124.21 (CCH, triazole), 107.97 (Ar-CH), 102.63 (Ar-CH), 84.93 (C-1), 74.73 (C-5), 71.15 (C-3), 66.84 (C-4), 62.01 (CH<sub>2</sub>OAr), 61.81 (C-6), 50.51 (SCH<sub>2</sub>CH<sub>2</sub>triazole), 49.09 (C-2), 30.27 (SCH<sub>2</sub>CH<sub>2</sub>triazole), 23.25 (NHAc), 20.73, 20.68, 20.66 (each OAc).

ES-HRMS calcd for C<sub>44</sub>H<sub>58</sub>N<sub>8</sub>O<sub>18</sub>S<sub>2</sub>Na<sub>1</sub> 1073.3208, found m/z 1073.3213 [M+Na]<sup>+</sup>

IR (ATR) cm<sup>-1</sup>: 1742, 1663, 1593, 1553, 1492, 1370, 1223, 1150, 1081, 1034, 919, 732

*R*<sub>f</sub> 0.42 (2:23 MeOH-CH<sub>2</sub>Cl<sub>2</sub>)

**1,4-Di[1-(ethyl 2-acetamido-3,4,6-tri-O-acetyl-2-deoxy- $\beta$ -D-galactopyranosyl)-1,2,3-triazol-4-ylmethoxy]benzene**



<sup>1</sup>H NMR (500 MHz, CDCl<sub>3</sub>) δ 7.75 (s, 2H, CCH, triazole), 6.92 (s, 4H, Ar-H), 5.60 (d, *J* = 9.0 Hz, 2H, NH), 5.34 (dd, *J* = 3.5, 1.2 Hz, 2H, H-4), 5.14 (d, *J* = 3.0 Hz, 4H, ArOCH<sub>2</sub>), 5.10 (dd, *J* = 11.3, 3.4 Hz, 2H, H-3), 4.63 (ddd, *J* = 14.6, 4.4, 2.9 Hz, 2H, OCH<sub>2</sub>CH<sub>2</sub>triazole), 4.56 – 4.47 (m, 2H, OCH<sub>2</sub>CH<sub>2</sub>triazole) , 4.51 (d, *J* = 8.4 Hz, 2H, H-1), 4.27 (ddd, *J* = 10.7, 4.4, 3.3 Hz, 2H, OCH<sub>2</sub>CH<sub>2</sub>triazole), 4.13 (dd, *J* = 6.6, 5.8 Hz, 4H, H-6a, H-6b), 4.11 – 4.07 (m, 2H, H-2), 3.93 – 3.89 (m, 2H, OCH<sub>2</sub>CH<sub>2</sub>triazole), 3.87 (dd, *J* = 6.6, 1.3 Hz, 2H, H-5), 2.15 (s, 6H), 2.05 (s, 6H), 1.99 (s, 6H) (each OAc), 1.85 (s, 6H, NHAc).

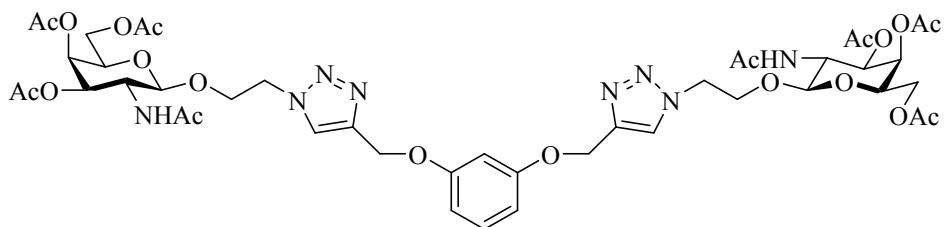
<sup>13</sup>C NMR (126 MHz, CDCl<sub>3</sub>) δ 170.58, 170.54, 170.39, 170.16 (each C=O), 152.74 (Ar-C), 143.88 (CCH, triazole), 124.46 (CCH, triazole), 115.90 (Ar-CH), 101.02 (C-1), 70.86 (C-5), 69.86 (C-3), 67.18 (OCH<sub>2</sub>CH<sub>2</sub>triazole), 66.55 (C-4), 62.44 (CH<sub>2</sub>OAr), 61.39 (C-6), 50.81 (C-2), 50.17 (OCH<sub>2</sub>CH<sub>2</sub>triazole), 23.28 (NHAc), 20.68, 20.67, 20.64 (each OAc).

ES-HRMS calcd for C<sub>44</sub>H<sub>58</sub>N<sub>8</sub>O<sub>20</sub>Na<sub>1</sub> 1041.3665, found m/z 1041.3674 [M+Na]<sup>+</sup>

IR (ATR) cm<sup>-1</sup>: 1744, 1663, 1548, 1507, 1371, 1223, 1137, 1050, 1033, 830, 733

*R*<sub>f</sub>: 0.36 (2:23 MeOH-CH<sub>2</sub>Cl<sub>2</sub>)

**1,3-Di[1-(ethyl 2-acetamido-3,4,6-tri-O-acetyl-2-deoxy- $\beta$ -D-galactopyranosyl)-1,2,3-triazol-4-ylmethoxy]benzene**



<sup>1</sup>H NMR (500 MHz, CDCl<sub>3</sub>) δ 7.77 (s, 2H, CCH, triazole), 7.23 (t, *J* = 8.3 Hz, 1H, Ar-H), 6.65 (dd, *J* = 8.3, 2.4 Hz, 2H, Ar-H), 6.47 (t, *J* = 2.3 Hz, 1H, Ar-H), 6.02 (d, *J* = 9.1 Hz, 2H, NH), 5.34 (dd, *J* = 3.4, 1.2 Hz, 2H, H-4), 5.19 d, *J* = 11.7 Hz, 2H, ArOCH<sub>2</sub>), 5.12 (d, *J* = 11.7 Hz, 2H, ArOCH<sub>2</sub>), 5.06 (dd, *J* = 11.3, 3.4 Hz, 2H, H-3), 4.67 (dt, *J* = 14.5, 3.3 Hz, 2H, OCH<sub>2</sub>CH<sub>2</sub>triazole), 4.50 (ddd, *J* = 14.5, 9.7, 3.1 Hz, 2H, OCH<sub>2</sub>CH<sub>2</sub>triazole), 4.36 (d, *J* = 8.4 Hz, 2H, H-1), 4.29 (dt, *J* = 10.9, 3.5 Hz, 2H, OCH<sub>2</sub>CH<sub>2</sub>triazole), 4.17 – 4.08 (m, 2H, H-2) 4.13 (dd, *J* = 7.8, 6.5 Hz, 4H, H-6a, H-6b), 3.90 (dd, *J* = 6.5, 1.3 Hz, 2H, H-5), 3.89 – 3.83 (m, 2H, OCH<sub>2</sub>CH<sub>2</sub>triazole), 2.14 (s, 6H), 2.05 (s, 6H), 1.91 (s, 6H) (each OAc), 1.83 (s, 6H, NHAc).

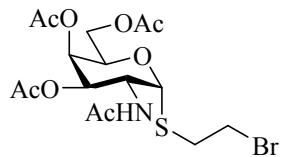
<sup>13</sup>C NMR (126 MHz, CDCl<sub>3</sub>) δ 170.75, 170.71, 170.43, 170.29 (each C=O), 159.22 (Ar-C), 143.15 (CCH, triazole), 130.42 (Ar-CH), 124.91 (CCH, triazole), 107.04, (Ar-CH) 102.78 (Ar-CH), 101.10 (C-1), 70.81 (C-5), 70.07 (C-3), 67.21 (OCH<sub>2</sub>CH<sub>2</sub>triazole), 66.61 (C-4), 61.61 (CH<sub>2</sub>OAr), 61.52 (C-6), 50.45 (C-2), 50.27 (OCH<sub>2</sub>CH<sub>2</sub>triazole), 23.15 (NHAc), 20.70, 20.69, 20.64 (each OAc).

ES-HRMS calcd for C<sub>44</sub>H<sub>58</sub>N<sub>8</sub>O<sub>20</sub>Na<sub>1</sub> 1041.3665, found m/z 1041.3655 [M+Na]<sup>+</sup>

IR (ATR) cm<sup>-1</sup>: 1743, 1664, 1593, 1555, 1370, 1224, 1152, 1047, 1032, 733

*R*<sub>f</sub> 0.39 (2:23 MeOH-CH<sub>2</sub>Cl<sub>2</sub>)

**2-Bromoethyl 2-acetamido-3,4,6-tri-O-acetyl-2-deoxy-1-thio- $\alpha$ -D-galactopyranose**



<sup>1</sup>H NMR (500 MHz, CDCl<sub>3</sub>): 5.60 (d, *J* = 5.3 Hz, 1H, H-1), 5.60 (d, *J* = 8.5 Hz, 1H, NH) 5.38 (dd, *J* = 3.3, 1.3 Hz, 1H, H-4), 5.03 (dd, *J* = 11.8, 3.3 Hz, 1H, H-3), 4.75 (ddd, *J* = 11.8, 8.5, 5.3 Hz, 1H, H-2), 4.60 – 4.50 (m, 1H, H-5), 4.13 (dd, *J* = 11.5, 5.3 Hz, 1H, H-6a), 4.09 (dd, *J* = 11.5, 7.4 Hz, 1H, H-6b), 3.59 (td, *J* = 10.0, 5.7 Hz, 1H, SCH<sub>2</sub>CH<sub>2</sub>Br), 3.48 (td, *J* = 10.0, 6.1 Hz, 1H, SCH<sub>2</sub>CH<sub>2</sub>Br), 3.10 (ddd, *J* = 13.9, 10.1, 6.1 Hz, 1H, SCH<sub>2</sub>CH<sub>2</sub>Br), 3.01 (ddd, *J* = 13.9, 10.1, 5.7 Hz, 1H, SCH<sub>2</sub>CH<sub>2</sub>Br), 2.16 (s, 3H), 2.07 (s, 3H), 2.01 (s, 3H) (each OAc), 1.97 (s, 3H, NHAc).

<sup>13</sup>C NMR (126 MHz, CDCl<sub>3</sub>): δ 171.05, 170.37, 170.17, 170.14 (each C=O), 85.60 (C-1), 68.21 (C-3), 67.69 (C-5), 67.29 (C-4), 62.16 (C-6), 48.50 (C-2), 33.60 (SCH<sub>2</sub>CH<sub>2</sub>Br), 30.28 (SCH<sub>2</sub>CH<sub>2</sub>Br), 23.29 (NHAc), 20.72, 20.70, 20.66 (each OAc).

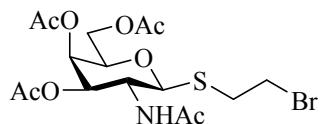
ES-HRMS calcd for C<sub>16</sub>H<sub>24</sub>N<sub>1</sub>O<sub>8</sub>Na<sub>1</sub>S<sub>1</sub>Br<sub>1</sub> 492.0304, found *m/z* 492.0321 [M+Na]<sup>+</sup>

IR cm<sup>-1</sup>: 1746, 1663, 1543, 1371, 1230, 1083, 1049

*R*<sub>f</sub> 0.48 (3:47 MeOH-CH<sub>2</sub>Cl<sub>2</sub>)

[ $\alpha$ ]<sub>D</sub><sup>20</sup> 126.1 (*c* 0.19, CHCl<sub>3</sub>)

**2-Bromoethyl 2-acetamido-3,4,6-tri-O-acetyl-2-deoxy-1-thio- $\beta$ -D-galactopyranose**



<sup>1</sup>H NMR (500 MHz, CDCl<sub>3</sub>): δ 5.42 – 5.38 (m, 2H, NH, H-4), 5.14 (dd, *J* = 10.8, 3.3 Hz, 1H, H-3), 4.70 (d, *J* = 10.3 Hz, 1H, H-1), 4.23 (td, *J* = 10.5, 9.2 Hz, 1H, H-2), 4.13 – 4.11 (m, 2H, H-6a, H-6b), 3.93 (ddd, *J* = 7.1, 6.0, 1.2 Hz, 1H, H-5), 3.62 (ddd, *J* = 11.0, 9.8, 5.6 Hz, 1H, SCH<sub>2</sub>CH<sub>2</sub>Br), 3.54 (ddd, *J* = 11.0, 9.8, 5.6 Hz, 1H, SCH<sub>2</sub>CH<sub>2</sub>Br), 3.23 (ddd, *J* = 14.0, 11.0, 5.6 Hz, 1H, SCH<sub>2</sub>CH<sub>2</sub>Br), 3.01 (ddd, *J* = 14.0, 11.0, 5.6 Hz, 1H, SCH<sub>2</sub>CH<sub>2</sub>Br), 2.17 (s, 3H), 2.08 (s, 3H), 2.01 (s, 3H) (each OAc), 1.97 (s, 3H, NHAc).

<sup>13</sup>C NMR (126 MHz, CDCl<sub>3</sub>): δ 170.63, 170.46, 170.24, 170.15 (each C=O), 85.64 (C-1), 74.78 (C-5), 70.96 (C-3), 66.90 (C-4), 61.90 (C-6), 49.75 (C-2), 33.03 (SCH<sub>2</sub>CH<sub>2</sub>Br), 30.90 (SCH<sub>2</sub>CH<sub>2</sub>Br), 23.37 (NHAc), 20.71, 20.71, 20.65 (each OAc).

ES-HRMS calcd for C<sub>16</sub>H<sub>24</sub>Br<sub>1</sub>N<sub>1</sub>O<sub>8</sub>S<sub>1</sub>Na<sub>1</sub> 492.0304, found *m/z* 492.0300 [M+Na]<sup>+</sup>

IR cm<sup>-1</sup>: 1743, 1656, 1547, 1435, 1370, 1225, 1082, 1047, 1034, 920

*R*<sub>f</sub>: 0.42 (1:19 MeOH-CH<sub>2</sub>Cl<sub>2</sub>)

[ $\alpha$ ]<sub>D</sub><sup>20</sup> -26.9 (*c* 0.19, CHCl<sub>3</sub>)