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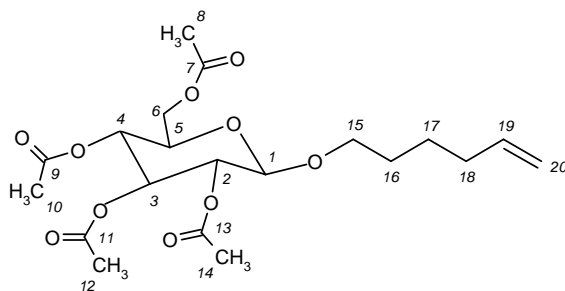
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## A Catalytic Approach to Functional Poly(1,4-ketone)s Bearing Pendant Monosaccharide Fragments

*Violeta Malinova, Bernhard Rieger\**

Supporting Information for Monomers **2 a,b**; Deprotected Terpolymers **5 a,b** and Deprotected Copolymers **6 a,b**.

### 5-Hexenyl 2,3,4,6-Tetra-*O*-acetyl- $\beta$ -D-glucopyranoside **2a**.



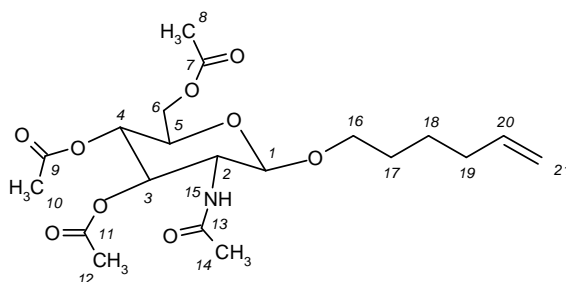
<sup>1</sup>H NMR (CDCl<sub>3</sub>):  $\delta$  = 5.75 (m, 1H, 19), 5.17 (t, 1H, 3), 5.08 (t, 1H, 4), 4.98 (m, 3H, 2 and 20), 4.47 (d, 1H, 1), 4.25 (dd, 1H, 6b), 4.12 (dd, 1H, 6a), 3.85 (m, 1H, 15a), 3.65 (m, 1H, 15b), 3.46 (m, 1H, 5), 2.05-1.98 (4 s, 12H, 4 CH<sub>3</sub>, 8, 10, 12, 14), 1.96 (m, 2H, 18), 1.55 (m, 2H, 17), 1.40 (m, 2H, 16).

<sup>13</sup>C NMR (CDCl<sub>3</sub>):  $\delta$  = 170.7 (C<sub>13</sub>), 170.3 (C<sub>11</sub>), 169.4 (C<sub>9</sub>), 169.3 (C<sub>7</sub>), 138.5 (C<sub>19</sub>), 114.7 (C<sub>20</sub>), 100.8 (C<sub>1</sub>), 72.9 (C<sub>3</sub>), 71.8 (C<sub>2</sub>), 71.4 (C<sub>15</sub>), 69.9 (C<sub>4</sub>), 68.5 (C<sub>5</sub>), 61.9 (C<sub>6</sub>), 33.2 (C<sub>18</sub>), 28.8 (C<sub>16</sub>), 25.0 (C<sub>17</sub>), 20.7-20.5 (C<sub>8</sub>, C<sub>10</sub>, C<sub>12</sub>, C<sub>14</sub>, 4C, COCH<sub>3</sub>).

IR (KBr): 1755(C=O, Ac gr.) cm<sup>-1</sup>

C<sub>20</sub>H<sub>30</sub>O<sub>10</sub> (430.45 g/mol): Calcd C 55.81, H 7.02; Found C 55.80; H 6.90.

## 5-Hexenyl 2-Acetamido-3,4,6-tri-*O*-acetyl-2-deoxy- $\beta$ -D-glucopyranoside **2b**.



$^1\text{H}$  NMR ( $\text{CDCl}_3$ ):  $\delta$  = 5.74 (m, 1H, 19), 5.55 (d, 1H, 15), 5.26 (t, 1H, 3), 5.09-4.95 (m with t at 5.02, 3H, 4 and 20), 4.67 (d, 1H, 1), 4.22 (dd, 1H, 6b), 4.11 (dd, 1H, 6a), 3.90-3.67 (m, 2H, 15), 3.66 (ddd, 1H, 2), 3.46 (m, 1H, 5), 2.05-1.99 (m, 11H, 3  $\text{CH}_3$  and 1  $\text{CH}_2$ , 8, 10, 12, 18), 1.91 (s, 3H, 14), 1.57 (m, 2H, 17), 1.40 (m, 2H, 16).

$^{13}\text{C}$  NMR ( $\text{CDCl}_3$ ):  $\delta$  = 170.8 ( $\text{C}_{11}$ ), 170.7 ( $\text{C}_7$ ), 170.1 ( $\text{C}_9$ ), 169.3 ( $\text{C}_{13}$ ), 138.5 ( $\text{C}_{19}$ ), 114.6 ( $\text{C}_{20}$ ), 100.6 ( $\text{C}_1$ ), 72.3 ( $\text{C}_5$ ), 71.7 ( $\text{C}_3$ ), 69.6 ( $\text{C}_4$ ), 68.7 ( $\text{C}_{15}$ ), 62.1 ( $\text{C}_6$ ), 54.8 ( $\text{C}_2$ ), 33.3 ( $\text{C}_{18}$ ), 28.8 ( $\text{C}_{16}$ ), 25.1 ( $\text{C}_{17}$ ), 23.3 ( $\text{C}_{14}$ ,  $\text{NHCOCH}_3$ ), 20.66–20.56 ( $\text{C}_8$ ,  $\text{C}_{10}$ ,  $\text{C}_{13}$ , 3C,  $\text{COCH}_3$ ).

IR (KBr): 3320 (NH), 1750 (C=O, Ac gr.), 1658 (CN, amide), 1545  $\text{cm}^{-1}$  (NH).

$\text{C}_{20}\text{H}_{31}\text{NO}_9$  (429.46 g/mol): Calcd C 55.98, H 7.22, N 3.26; Found: C 55.90, H 7.31, N 3.27.

## Terpolymer CO/Propylene/5-Hexenyl- $\beta$ -D-glucopyranoside **5a**.

$^1\text{H}$  NMR ( $\text{CDCl}_3$ ):  $\delta$  = 4.25-3.30 ( $\text{CH}$  sugar residue and  $\text{CH}_2$  alkenyl spacer); 3.16-2.91 (br.,  $\text{CH}_2$  polymer backbone), 2.50-2.32 (br.,  $\text{CH}$  polymer backbone), 1.75-1.21 ( $\text{CH}_2$  alkenyl spacer); 1.10-0.85 (br.,  $\text{CH}_3$ ).

IR (KBr): 3500 (OH), 2969-2865 ( $\text{CH}_3$ ,  $\text{CH}_2$ , CH), 1706  $\text{cm}^{-1}$  (C=O, polymer backbone).

**Terpolymer CO/Propylene/5-Hexenyl 2-Acetamido-2-deoxy- $\beta$ -D-glucopyranoside 5b.**

$^1\text{H}$  NMR ( $\text{CDCl}_3$ ):  $\delta = 4.46\text{-}3.32$  ( $\text{CH}$  sugar residue and  $\text{CH}_2$  alkenyl spacer);  $3.20\text{-}2.91$  (br.,  $\text{CH}_2$  polymer backbone),  $2.46\text{-}2.31$  (br.,  $\text{CH}$  polymer backbone),  $1.98$  ( $\text{HNCOCH}_3$ );  $1.70\text{-}1.22$  ( $\text{CH}_2$  alkenyl spacer);  $1.11\text{-}0.96$  (br.,  $\text{CH}_3$ ).

IR (KBr):  $3400$  (OH),  $2969\text{-}2860$  ( $\text{CH}_3$ ,  $\text{CH}_2$ , CH),  $1706$  ( $\text{C=O}$ , polymer backbone),  $1658$  (CN, amide),  $1550\text{ cm}^{-1}$  (NH).

**Copolymer CO/5-Hexenyl- $\beta$ -D-glucopyranoside 6a.**

$^1\text{H}$  NMR ( $\text{D}_2\text{O}$ ):  $\delta = 4.50\text{-}3.33$  (br., 9H, 7H from  $\text{CH}$  sugar residue and 2H from  $\text{CH}_2$  alkenyl spacer);  $2.95\text{-}2.54$  (br., 3H,  $\text{CH}$  and  $\text{CH}_2$  polymer backbone);  $1.69\text{-}1.40$  (6H, 3  $\text{CH}_2$  alkenyl spacer).

IR (KBr):  $3450$  (br. OH),  $2924\text{-}2820$  ( $\text{CH}_2$ , CH),  $1705\text{ cm}^{-1}$  ( $\text{C=O}$ , polymer backbone).

$(\text{C}_{13}\text{H}_{22}\text{O}_7)_n(290.35)_n$ : Calcd C 53.77, H 7.65; Found: C 53.53, H 7.88.

**Copolymer CO/5-Hexenyl 2-Acetamido-2-deoxy- $\beta$ -D-glucopyranoside 6b.**

$^1\text{H}$  NMR ( $\text{D}_2\text{O}$ ):  $\delta = 4.45\text{-}3.38$  (br., 9H, 7H from  $\text{CH}$  sugar residue and 2H from  $\text{CH}_2$  alkenyl spacer);  $2.92\text{-}2.46$  (br., 3H,  $\text{CH}$  and  $\text{CH}_2$  polymer backbone);  $1.99$  (3H,  $\text{HNCOCH}_3$ );  $1.49\text{-}1.22$  (6H, 3  $\text{CH}_2$  alkenyl spacer).

IR (KBr):  $3400$  (OH),  $2925\text{-}2860$  ( $\text{CH}_2$ , CH),  $1709$  ( $\text{C=O}$ , polymer backbone),  $1658$  (CN, amide),  $1556\text{ cm}^{-1}$  (NH).

$(\text{C}_{15}\text{H}_{25}\text{NO}_7)_n(331.41)_n$ : Calcd C 54.36, H 7.62, N 4.23; Found: C 54.10, H 7.89, N 4.14.