

## シアル酸糖鎖合成試薬

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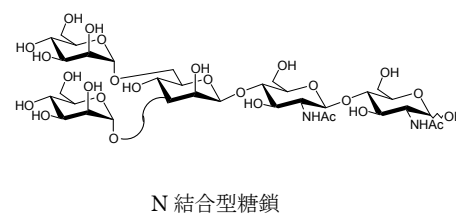
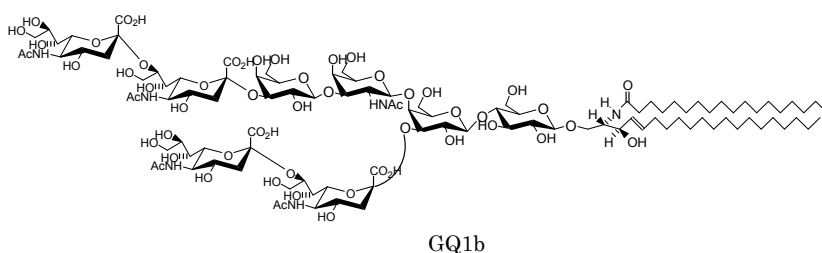
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糖鎖はグルコース、ガラクトースやシアル酸といった単糖がグリコシド結合によりいくつもつながって鎖状に構築している化合物であり、核酸、たんぱく質に次いで第3の生命鎖と呼ばれ、ポストゲノムに続く次世代ポストゲノムとして重要課題とされ研究が行われています。糖鎖はたんぱく質や脂質などの表面に結合して、細胞内外の情報伝達や免疫システムに関与することから、細胞のがん化やウイルス感染に重要な役割を果たすことが知られています。このため、たんぱく質に糖鎖を付加して機能を改良した医薬品などの開発が期待できます。

シアル酸 (N-アセチルノイラミン酸) 含有糖鎖は細胞表層において認識、免疫等に関係しますが、シアル酸含有糖鎖は天然物に微量含まれており、非常に高価な値段で販売されています。そこでシアル酸糖鎖合成原料として高純度シアル酸を安価に供給すると共に、シアル酸誘導体、ガラクトース誘導体、グルコース誘導体、シアリルガラクトース等のシアル酸含有糖鎖、コロミン酸、ヒアルロン酸等の多糖類等の糖鎖関連試薬を発売しました。特に2糖のシアル酸含有糖鎖をg単位で大量合成することに成功したことで2糖、3糖をg単価数百万円で販売することが可能となりました。なお、将来はシアリルラクトース等の糖鎖やセラミド等の試薬も販売予定です。

### 《目標とするシアル酸含有糖鎖等》



#### 受託合成、受託精製、受託研究のご案内

糖鎖研究では、目的によって糖の種類、鎖長、保護基等により多彩な化合物を必要とします。また、糖鎖を延長すると新しく形成するグリコシド結合のアノメリック位異性体 ( $\alpha$ 、 $\beta$ ) が生成するために、この分離精製には熟練が必要でした。弊社では、有機合成、分離精製、構造決定等の総合力で受託合成、受託精製、受託研究をお引き受けしています。

## 1. シアル酸誘導体等

Code No.	Storage Conditions	Product Name · Purity · Molecular Formula=Molecular Weight · [ CAS Registry Number ]	Quantity · Price ( JPY )
SA001002 SA001010 SA001025	-20°C	<b>N</b> Acetylneuraminic acid ( NANA ; Sialic acid ) $\geq 99\%$ (HPLC) crystal C <sub>11</sub> H <sub>19</sub> NO <sub>9</sub> = 309.27 [131-48-6]	2g 16,000 10g 26,000 25g 60,000
SA002002 SA002010	-20°C	<b>N</b> Acetylneuraminic acid, methyl ester ( Sialic acid, methyl ester ) $\geq 95\%$ (TLC) C <sub>12</sub> H <sub>21</sub> NO <sub>9</sub> = 323.30 [22900-11-4]	2g 24,000 10g 96,000
SA003002 SA003010	-20°C	<b>N</b> Acetylneuraminic acid, 2,4,7,8,9-pentaacetate ( Sialic acid, 2,4,7,8,9-pentaacetate ) $\geq 95\%$ (TLC) C <sub>21</sub> H <sub>29</sub> NO <sub>14</sub> = 519.45 [4887-11-0]	2g 24,000 10g 96,000
SA004001 SA004010	-20°C	<b>N</b> Acetylneuraminic acid, methyl ester, 2,4,7,8,9-pentaacetate ( Sialic acid, methyl ester, 2,4,7,8,9-pentaacetate ) $\geq 95\%$ (TLC) C <sub>22</sub> H <sub>31</sub> NO <sub>14</sub> = 533.48 [73208-82-9]	1g 30,000 10g 210,000
SA005001 SA005010	冷暗所	<b>N</b> Acetyl-2-phenylthioneuraminic acid, methyl ester, 4,7,8,9-tetraacetate ( 2-(SPh)-sialic acid, methyl ester, 4,7,8,9-tetraacetate ) ( $\alpha$ , $\beta$ mix ) $\geq 98\%$ (TLC) C <sub>26</sub> H <sub>33</sub> NO <sub>12</sub> S = 583.61 [155155-64-9]	1g 40,000 10g 320,000
SA006001 SA006005	2-10°C	<b>N</b> Iodosuccinimide <sup>1)-2)</sup> $\geq 99\%$ (TLC) C <sub>4</sub> H <sub>4</sub> INO <sub>2</sub> = 224.98 [516-12-1]	1g 18,000 5g 36,000
SA007010 SA007050 SA007100	-20°C	2- <i>O</i> -Methyl $\alpha$ -D- <b>N</b> acetylneuraminic acid $\geq 98\%$ (TLC) C <sub>12</sub> H <sub>21</sub> NO <sub>9</sub> =323.30 [50930-22-8]	10mg 22,000 50mg 88,000 100mg 154,000
SA008010 SA008050 SA008100	-20°C	2- <i>O</i> -Phenyl $\alpha$ -D- <b>N</b> acetylneuraminic acid $\geq 98\%$ (TLC) C <sub>17</sub> H <sub>23</sub> NO <sub>9</sub> =385.37 [15964-32-6]	10mg 30,000 50mg 120,000 100mg 210,000
SA010100	2-10°C	Methyl 2,3-didehydro-4,7,8,9-tetra- <i>O</i> -acetyl- <b>N</b> acetylneuraminate C <sub>20</sub> H <sub>27</sub> NO <sub>12</sub> =473.42 [73960-72-2]	100mg 30,000
SA011001	冷暗所	<b>N</b> Acetyl-2-phenylthio- $\alpha$ -neuraminic acid, methyl ester, 4,7,8,9-tetraacetate ( 2-(SPh)- $\alpha$ -sialic acid, methyl ester, 4,7,8,9-tetraacetate ) $\geq 98\%$ (TLC) C <sub>26</sub> H <sub>33</sub> NO <sub>12</sub> S = 583.61 [118977-26-7]	1g 60,000

- 1) 日本農芸化学会大会、講演番号 3Da4(1991), 3Ia9 & 3Ia10(1992), 3Aa7 & 3Aa8(1993), 2Gp10 & 2Gp11(1994).  
2) 第 60 回有機合成シンポジウム、要旨集 p29(1991).

## 2. グルコース誘導体

Code No.	Storage Conditions	Product Name · Purity · Molecular Formula=Molecular Weight · [ CAS Registry Number ]	Quantity · Price ( JPY )
GL001010	2-10°C	4-Methoxyphenyl 2,3,4,6-tetra- <i>O</i> -acetyl- $\beta$ -D-glucopyranoside $\geq 98\%$ (TLC) C <sub>21</sub> H <sub>26</sub> O <sub>11</sub> = 454.42 [14581-81-8]	10g 15,000
GL002005	2-10°C	4-Methoxyphenyl $\beta$ -D-glucopyranoside $\geq 98\%$ (TLC) C <sub>13</sub> H <sub>18</sub> O <sub>7</sub> =286.28 [6032-32-2]	5g 22,000
GL003005	2-10°C	Phenyl 2,3,4,6-tetra- <i>O</i> -acetyl-1-thio- $\beta$ -D-glucopyranoside $\geq 98\%$ (TLC) C <sub>20</sub> H <sub>24</sub> O <sub>9</sub> S=440.46 [23661-28-1]	5g 22,000
GL004001 GL004005	2-10°C	Phenyl 1-thio- $\beta$ -D-glucopyranoside $\geq 98\%$ (TLC) C <sub>12</sub> H <sub>16</sub> O <sub>5</sub> S=272.32 [2936-70-1]	1g 25,000 5g 100,000
GL005001 GL005005	2-10°C	Ethyl 2,3,4,6-tetra- <i>O</i> -acetyl-1-thio- $\beta$ -D-glucopyranoside $\geq 98\%$ (TLC) C <sub>16</sub> H <sub>24</sub> O <sub>9</sub> S=392.42 [52645-73-5]	1g 15,000 5g 60,000
GL006001 GL006005	2-10°C	Ethyl 1-thio- $\beta$ -D-glucopyranoside $\geq 98\%$ (TLC) C <sub>8</sub> H <sub>16</sub> O <sub>5</sub> S=224.28 [7473-36-1]	1g 30,000 5g 120,000

### 3. ガラクトース誘導体

Code No.	Storage Conditions	Product Name · Purity · Molecular Formula = Molecular Weight · [ CAS Registry Number ]	Quantity · Price ( JPY )
GA001010	2-10°C	<b>4-Methoxyphenyl 2,3,4,6-tetra-<i>O</i>-acetyl-β-D-galactopyranoside</b> ≥ 98% (TLC) C <sub>21</sub> H <sub>26</sub> O <sub>11</sub> =454.42 [2872-65-3]	10g 20,000
GA002005	2-10°C	<b>4-Methoxyphenyl β-D-galactopyranoside</b> ≥ 98% (TLC) C <sub>13</sub> H <sub>18</sub> O <sub>7</sub> =286.28 [3150-20-7]	5g 24,000
GA003002	2-10°C	<b>4-Methoxyphenyl 2,6-di-<i>O</i>-benzyl-β-D-galactopyranoside</b> ≥ 98% (TLC) C <sub>27</sub> H <sub>30</sub> O <sub>7</sub> =466.52 [159922-50-6]	2g 24,000
GA004001	2-10°C	<b>4-Methoxyphenyl 2,3-di-<i>O</i>-benzyl-β-D-galactopyranoside</b> ≥ 98% (TLC) C <sub>27</sub> H <sub>30</sub> O <sub>7</sub> =466.52	1g 20,000
GA005005	2-10°C	<b>Phenyl 2,3,4,6-tetra-<i>O</i>-acetyl-1-thio-β-D-galactopyranoside</b> ≥ 98% (TLC) C <sub>20</sub> H <sub>24</sub> O <sub>9</sub> S=440.47 [24404-53-3]	5g 28,000
GA006001 GA006005	2-10°C	<b>Phenyl 1-thio-β-D-galactopyranoside</b> ≥ 98% (TLC) C <sub>12</sub> H <sub>16</sub> O <sub>5</sub> S=272.32 [16758-34-2]	1g 30,000 5g 120,000
GA007001	2-10°C	<b>2-(Trimethylsilyl)ethyl β-D-galactopyranoside</b> ≥ 98% (TLC) C <sub>11</sub> H <sub>24</sub> O <sub>6</sub> Si=280.39 [117252-95-6]	1g 24,000

### 4. ラクトース誘導体

Code No.	Storage Conditions	Product Name · Purity · Molecular Formula = Molecular Weight · [ CAS Registry Number ]	Quantity · Price ( JPY )
LA001500 LA001001	2-10°C	<b>4-Methoxyphenyl 4-<i>O</i>-β-D-galactopyranosyl-β-D-glucopyranoside</b> ≥ 98% (TLC) C <sub>19</sub> H <sub>28</sub> O <sub>12</sub> =448.42 [150412-80-9]	500mg 20,000 1g 32,000
LA002500 LA002001	2-10°C	<b>4-Methoxyphenyl 2,2',3,6,6'-penta-<i>O</i>-benzyl-4-<i>O</i>-β-D-galactopyranosyl-β-D-glucopyranoside</b> ≥ 98% (TLC) C <sub>54</sub> H <sub>58</sub> O <sub>12</sub> =899.03 [358681-61-5]	500mg 36,000 1g 60,000
LA003500 LA003001	2-10°C	<b>4-Methoxyphenyl 2,2',3,6,6'-penta-<i>O</i>-benzyl-4-<i>O</i>-β-D-galactopyranosyl-β-D-glucopyranoside</b> ≥ 98% (TLC) C <sub>54</sub> H <sub>58</sub> O <sub>12</sub> =899.03	500mg 36,000 1g 60,000
LA004500	2-10°C	<b>2-(Trimethylsilyl)ethyl 4-<i>O</i>-β-D-galactopyranosyl-β-D-glucopyranoside</b> ≥ 98% (TLC) C <sub>17</sub> H <sub>34</sub> O <sub>11</sub> Si=442.53 [115969-51-2]	500mg 24,000
LA005500	2-10°C	<b>Benzyl 4-<i>O</i>-β-D-galactopyranosyl-β-D-glucopyranoside</b> ≥ 98% (TLC) C <sub>19</sub> H <sub>28</sub> O <sub>11</sub> =432.42 [18404-72-3]	500mg 24,000

### 5. オリゴマー コロミン酸塩、ヒアルロン酸

Code No.	Storage Conditions	Product Name · Purity by HPLC · Molecular Formula = Molecular Weight · [ CAS Registry Number ]	Quantity · Price ( JPY )
SA009500 SA009001	2-10°C	<b>Colominic acid, sodium salt from <i>E.coli</i></b> [70431-34-4]	500mg 12,000 1g 20,000
HA001005 HA001025	2-10°C	<b>Hyaluronic Acid from <i>Streptococcus</i> for Biochem.</b>	5g 15,000 25g 60,000
HA002005 HA002025	2-10°C	<b>Hyaluronic Acid Sodium Salt from <i>Streptococcus</i> for Biochem.</b>	5g 15,000 25g 60,000
HA003002 HA003005 HA003025	2-10°C	<b>Hyaluronic Acid Sodium Salt from Rooster Comb for Biochem.</b>	2g 16,000 5g 30,000 25g 125,000

### 6. ジシアル酸等

Code No.	Storage Conditions	Product Name · Purity by HPLC · Molecular Formula = Molecular Weight · [ CAS Registry Number ]	Quantity · Price ( JPY )
SA012100	-20°C	<b><i>N</i>-Acetylneuraminic acid, dimer (α, 2→8) (<i>N</i>-acetyl-8-<i>O</i>-(<i>N</i>-acetyl-α-neuraminosyl)-neuraminic acid, disodium salt)</b> C <sub>22</sub> H <sub>34</sub> N <sub>2</sub> N <sub>a2</sub> O <sub>17</sub> =644.49[149331-75-9]	100mg 25,000
SA013100	-20°C	<b><i>N</i>-Acetyl-8-<i>O</i>-(<i>N</i>-acetyl-4',7',8',9',-tetra-<i>O</i>-acetyl-α-neuraminosyl) -2-<i>S</i>-phenyl-2-thio-neuraminic acid, 1',9'-ester, 1-methyl-ester, 4,7-diacetate</b> C <sub>41</sub> H <sub>52</sub> N <sub>2</sub> O <sub>21</sub> S=940.92 [158111-03-6]	100mg 38,000

## 7. シアル酸含有糖鎖及び合成原料

Code No.	Storage Conditions	Product Name · Purity · Molecular Formula = Molecular Weight · [ CAS Registry Number ]	Quantity · Price ( JPY )
SG001010 SG001100 SG001001	2-10°C	<b>Protected 6'-<math>\alpha</math>-Sialylgalactose; Protected NeuAc <math>\alpha(2\rightarrow6)</math>-D-Gal</b> $\geq 98\%$ (TLC) C <sub>47</sub> H <sub>57</sub> NO <sub>19</sub> =939.95	10mg 20,000 100mg 90,000 1g 630,000
SG002010 SG002100 SG002001	2-10°C	<b>Protected 3'-<math>\alpha</math>-Sialylgalactose; Protected NeuAc <math>\alpha(2\rightarrow3)</math>-D-Gal</b> $\geq 98\%$ (TLC) C <sub>47</sub> H <sub>57</sub> NO <sub>19</sub> =939.95	10mg 20,000 100mg 90,000 1g 630,000
SG003010 SG003100	2-10°C	<b>Protected 6'-<math>\beta</math>-Sialylgalactose; Protected NeuAc <math>\beta(2\rightarrow6)</math>-D-Gal</b> $\geq 98\%$ (TLC) C <sub>47</sub> H <sub>57</sub> NO <sub>19</sub> =939.95	10mg 30,000 100mg 180,000
SL001010 SL001100 SL001001	2-10°C	<b>Protected 6'-<math>\alpha</math>-Sialyllactose; Protected NeuAc <math>\alpha(2\rightarrow6)</math>-D-Gal-<math>\beta(1\rightarrow4)</math>-D-Glc</b> $\geq 98\%$ (TLC) C <sub>74</sub> H <sub>85</sub> NO <sub>24</sub> =1372.46	10mg 28,000 100mg 140,000 1g 980,000
SL002010 SL002100 SL002001	2-10°C	<b>Protected 3'-<math>\alpha</math>-Sialyllactose; Protected NeuAc <math>\alpha(2\rightarrow3)</math>-D-Gal-<math>\beta(1\rightarrow4)</math>-D-Glc</b> $\geq 98\%$ (TLC) C <sub>74</sub> H <sub>85</sub> NO <sub>24</sub> =1372.46	10mg 28,000 100mg 140,000 1g 980,000
SL003010 SL003100	2-10°C	<b>Protected 6'-<math>\beta</math>-Sialyllactose; Protected NeuAc <math>\beta(2\rightarrow6)</math>-D-Gal-<math>\beta(1\rightarrow4)</math>-D-Glc</b> $\geq 98\%$ (TLC) C <sub>74</sub> H <sub>85</sub> NO <sub>24</sub> =1372.46	10mg 45,000 100mg 270,000
SL004001 SL004005	-20°C	<b>3'-Sialyllactose sodium salt, from human milk</b> $\geq 99\%$ (TLC) C <sub>23</sub> H <sub>38</sub> NO <sub>19</sub> Na=655.53 [128596-80-5, Component: 35890-38-1]	1mg 30,000 5mg 120,000
SL005001 SL005005	-20°C	<b>6'-Sialyllactose sodium salt, from human milk</b> $\geq 99\%$ (TLC) C <sub>23</sub> H <sub>38</sub> NO <sub>19</sub> Na=655.53 [157574-76-0, Component: 35890-39-2]	1mg 24,000 5mg 96,000
SL006010 SL006050	-20°C	<b>3'-Sialyllactose sodium salt (synthetic)</b> $\geq 99\%$ (TLC) C <sub>23</sub> H <sub>38</sub> NO <sub>19</sub> Na=655.53 [128596-80-5, Component: 35890-38-1]	10mg 10,000 50mg 20,000
SL007010 SL007050	-20°C	<b>6'-Sialyllactose sodium salt (synthetic)</b> $\geq 99\%$ (TLC) C <sub>23</sub> H <sub>38</sub> NO <sub>19</sub> Na=655.53 [157574-76-0, Component: 35890-39-2]	10mg 10,000 50mg 20,000
NS220502	-20°C	<b>Ganglioside GM3, from Milk</b> $\geq 99\%$ (TLC)	5mg 36,000
NS220602	-20°C	<b>Ganglioside GD3, ammonium salt, from Milk</b> $\geq 99\%$ (TLC)	5mg 36,000
GM200101	-20°C	<b>Ganglioside GM2 (18, 18)</b> $\geq 99\%$ (TLC) C <sub>67</sub> H <sub>121</sub> N <sub>3</sub> O <sub>26</sub> = 1384.68 [127663-77-8]	0.2mg 50,000
GM300101	-20°C	<b>Ganglioside GM3 (18, 2)</b> $\geq 99\%$ (TLC) C <sub>43</sub> H <sub>76</sub> N <sub>2</sub> O <sub>21</sub> = 957.06 [11545-33-6]	0.2mg 30,000
GM300201	-20°C	<b>Ganglioside GM3 (18, 8)</b> $\geq 99\%$ (TLC) C <sub>49</sub> H <sub>88</sub> N <sub>2</sub> O <sub>21</sub> = 1041.22 [ ]	0.2mg 30,000
GM300301	-20°C	<b>Ganglioside GM3 (18, 12)</b> $\geq 99\%$ (TLC) C <sub>53</sub> H <sub>96</sub> N <sub>2</sub> O <sub>21</sub> = 1097.33 [ ]	0.2mg 30,000
GM300401	-20°C	<b>Ganglioside GM3 (18, 16)</b> $\geq 99\%$ (TLC) C <sub>57</sub> H <sub>104</sub> N <sub>2</sub> O <sub>21</sub> = 1153.44 [138749-26-5]	0.2mg 30,000
GM300501	-20°C	<b>Ganglioside GM3 (18, 18)</b> $\geq 99\%$ (TLC) C <sub>59</sub> H <sub>108</sub> N <sub>2</sub> O <sub>21</sub> = 1181.49 [20237-00-7]	0.2mg 30,000
GM300601	-20°C	<b>Ganglioside GM3 (18, 24)</b> $\geq 99\%$ (TLC) C <sub>65</sub> H <sub>120</sub> N <sub>2</sub> O <sub>21</sub> = 1265.65 [98460-64-4]	0.2mg 30,000
GX001010 GX001100 GX001500	-20°C	<b>Azido-erythro-sphingosine</b> $\geq 99\%$ (TLC) C <sub>18</sub> H <sub>35</sub> N <sub>3</sub> O <sub>2</sub> = 325.49 [103348-49-8]	50mg 25,000 100mg 40,000 500mg 160,000
GX002010 GX002100	-20°C	<b>(2<i>S</i>, 3<i>R</i>, 4<i>E</i>)-2-Azido-3-benzoyl-erythro-sphingosine</b> $\geq 99\%$ (TLC) C <sub>25</sub> H <sub>39</sub> N <sub>3</sub> O <sub>3</sub> = 429.60 [103348-50-1]	10mg 23,000 100mg 180,000
GX003010 GX003100	-20°C	<b>(2<i>S</i>, 3<i>R</i>, 4<i>E</i>)-2-Azido-3-(<i>tert</i>-butyldimethylsilyl)-erythro-sphingosine</b> $\geq 99\%$ (TLC) C <sub>24</sub> H <sub>49</sub> N <sub>3</sub> O <sub>2</sub> Si = 439.75 [114299-64-8]	10mg 23,000 100mg 180,000

試験、研究を目的とした弊社試薬製品は、その使用により発生した特許法上の諸問題をユーザーの方々に保証するものではありません。