

## OligoTech®

# Tumor-associated carbohydrate antigens - TACAs

Elicityl is developing a unique offer of TACAs available at quantities and cost not seen before

15 major TACAs are offered in prepacks of 5 mg, 25 mg, 100 mg, 1 g and 5 g

- Each oligosaccharide results from a specific biological process of production developed by Elicityl
- Compounds available in Reagent Grade (purity >95%) or Technical Grade
- Bulk quantities available on specific demand

### Common expression patterns of carbohydrate antigens on tumor tissues

Tumor-associated carbohydrate antigens		Tumor tissues										References	
Code	Glycan name	Blood	Breast	Gastro-intestinal	Kidney	Lung	Neurogenic	Ovary	Pancreas	Prostate	Skin		Testis
GLY053	<b>sLe<sup>x</sup>*</b>	x	x						x				1,4
GLY052	<b>Le<sup>y</sup></b>	x	x		x			x	x	x			1,4
GLY127 GLY123	<b>Globo H</b>	x	x		x			x	x	x			1,2
GLY094	<b>GD2</b>						x				x		1
GLY091	<b>GD3</b>				x		x				x		1,2,3,4
GLY103	<b>Fucosyl GM1</b>				x								1
GLY093	<b>GM2</b>	x	x	x	x	x	x	x	x	x	x		1,3
GLY090	<b>GM3</b>	x			x		x						2,4
GLY133 GLY132	<b>Forsman antigen</b>		x		x								5
GLY120	<b>Globotriaose /Gb3/CD77</b>	x											6
GLY122	<b>SSEA-3</b>	x		x	x	x		x					7
GLY130 GLY131	<b>SSEA-4</b>			x		x		x				x	8,9

The loss of normal AB blood group antigen expression (accompanied by increased expression of H and Le<sup>y</sup> structures) is associated with a poorer clinical prognosis of carcinomas in several studies

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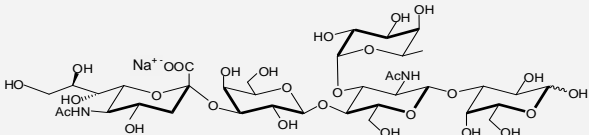
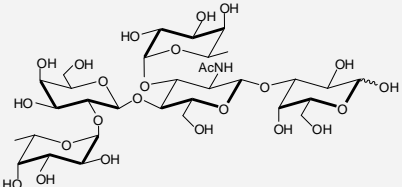
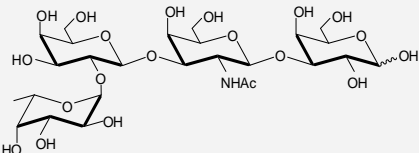
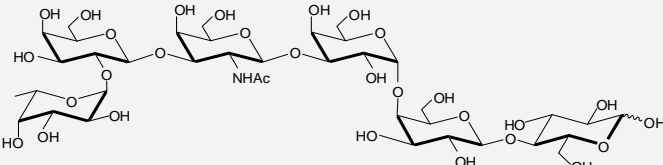
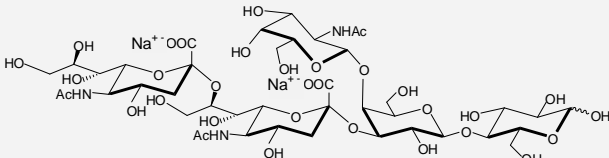
**ABH antigens** also available

This table is not exhaustive.

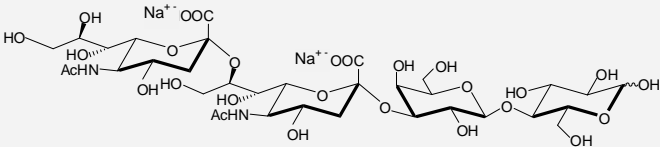
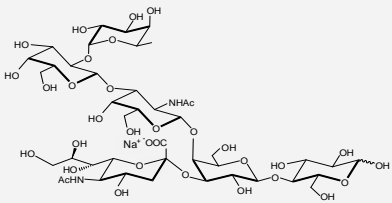
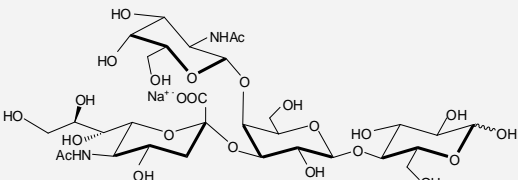
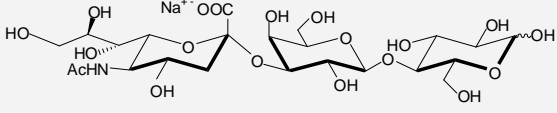
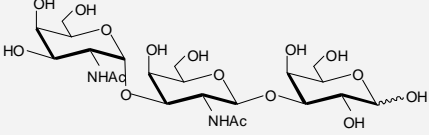
\* Involved in cancer cell metastasis thru interaction with P-selectin expressed on platelets and endothelial cells and L-selectin expressed by leucocytes (11).

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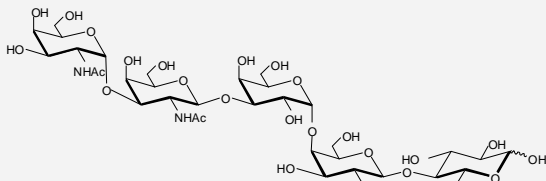
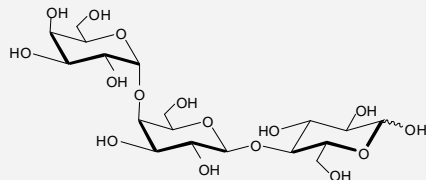
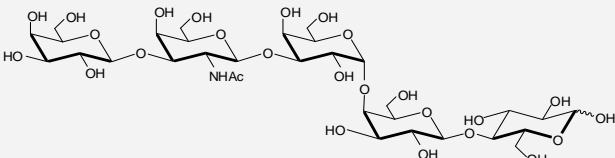
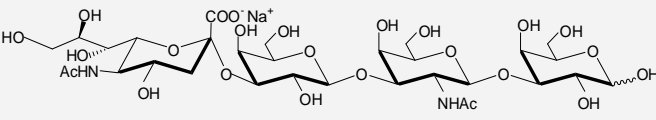
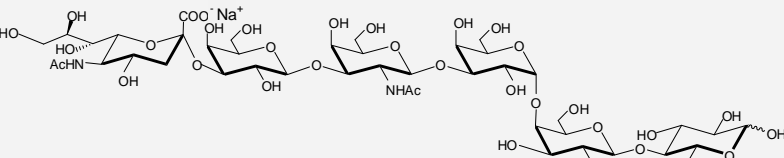
**Tumor-associated carbohydrate antigens**

GLY053	<b>Sialyl Lewis<sup>X</sup> (sLe<sup>X</sup>) pentaose</b>	Sodium salt
Neu5Acα2-3Galβ1-4(Fuca1-3)GlcNAcβ1-3Gal		C <sub>37</sub> H <sub>62</sub> N <sub>2</sub> O <sub>28</sub> Na FW 1005.87
		
Tumor-associated carbohydrate antigen (Ref 1,4) Ligand of selectin-dependant leucocyte adhesion (Ref 11)		5 mg, 25 mg, 100 mg, 1 g, 5 g
GLY052	<b>Lewis<sup>Y</sup> (Le<sup>Y</sup>) pentaose</b>	
Fuca1-2Galβ1-4(Fuca1-3)GlcNAcβ1-3Gal		C <sub>32</sub> H <sub>55</sub> NO <sub>24</sub> FW 837.77
		
Tumor-associated carbohydrate antigen (Ref 1,4)		5 mg, 25 mg, 100 mg, 1 g, 5 g
GLY127	<b>Globo H tetraose</b>	
Fuca1-2Galβ1-3GalNAcβ1-3Gal		C <sub>26</sub> H <sub>45</sub> NO <sub>20</sub> FW 691.62
		
Tumor-associated carbohydrate antigen (Ref 1,2)		5 mg, 25 mg, 100 mg, 1 g, 5 g
GLY123	<b>Globo H hexaose</b>	
Fuca1-2Galβ1-3GalNAcβ1-3Galα1-4Galβ1-4Glc		C <sub>38</sub> H <sub>65</sub> NO <sub>30</sub> FW 1015.90
		
Tumor-associated carbohydrate antigen (Ref 1,2)		5 mg, 25 mg, 100 mg, 1 g, 5 g
GLY094	<b>GD2 Ganglioside sugar</b>	Sodium salt
GalNAcβ1-4(Neu5Acα2-8Neu5Acα2-3)Galβ1-4Glc		C <sub>42</sub> H <sub>69</sub> N <sub>3</sub> O <sub>32</sub> Na <sub>2</sub> FW 1173.97
		
Tumor-associated carbohydrate antigen (Ref 1)		5 mg, 25 mg, 100 mg, 1 g, 5 g

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GLY091	<b>GD3 Ganglioside sugar</b>	Sodium salt
Neu5Aca2-8Neu5Aca2-3Galβ1-4Glc		
		$C_{42}H_{69}N_3O_{32}Na_2$ FW 1173.97
Tumor-associated carbohydrate antigen (Ref 1, 2, 3, 4)		5 mg, 25 mg, 100 mg, 1 g, 5 g
GLY103	<b>Fucosyl GM1 Ganglioside sugar</b>	Sodium salt
Fuca1-2Galβ1-3GalNAcβ1-4(Neu5Aca2-3)Galβ1-4Glc		
		$C_{43}H_{72}N_2O_{33}Na$ FW 1168.01
Tumor-associated carbohydrate antigen (Ref 1, 2, 3, 4)		5 mg, 25 mg, 100 mg, 1 g, 5 g
GLY093	<b>GM2 Ganglioside sugar</b>	Sodium salt
GalNAcβ1-4(Neu5Aca2-3)Galβ1-4Glc		
		$C_{31}H_{52}N_2O_{24}Na$ FW 859.73
Tumor-associated carbohydrate antigen (Ref 1, 3)		5 mg, 25 mg, 100 mg, 1 g, 5 g
GLY090	<b>GM3 Ganglioside sugar</b>	Sodium salt
Neu5Aca2-3Galβ1-4Glc		
		$C_{23}H_{39}NO_{19}Na$ FW 655.53
Tumor-associated carbohydrate antigen (Ref 2, 4)		5 mg, 25 mg, 100 mg, 1 g, 5 g
GLY133	<b>Forssman antigen triaose</b>	
GalNAca1-3GalNAcβ1-3Gal		
		$C_{22}H_{38}N_2O_{16}$ FW 586.54
Tumor-associated carbohydrate antigen (Ref 5)		5 mg, 25 mg, 100 mg, 1 g, 5 g

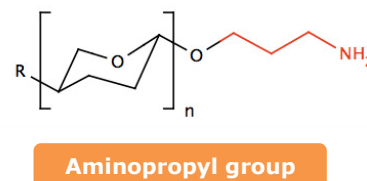
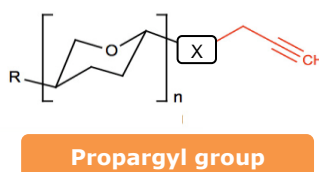
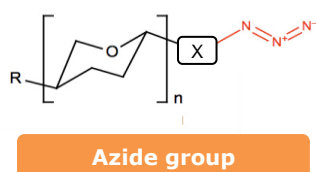
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<b>GLY132</b>	<b>Forsman antigen pentaoase</b>	
	GalNAc $\alpha$ 1-3GalNAc $\beta$ 1-3Gal $\alpha$ 1-4Gal $\beta$ 1-4Glc	C <sub>34</sub> H <sub>58</sub> N <sub>2</sub> O <sub>26</sub> FW 910.82
		
	Tumor-associated carbohydrate antigen (Ref 5)	5 mg, 25 mg, 100 mg, 1 g, 5 g
<b>GLY120</b>	<b>Globotriaose / Gb<sub>3</sub> / CD77 / P<sup>k</sup> antigen</b>	
	Gal $\alpha$ 1-4Gal $\beta$ 1-4Glc	C <sub>18</sub> H <sub>32</sub> O <sub>16</sub> FW 504.43 CAS [66580-68-5]
		
	Tumor-associated carbohydrate antigen (Ref 6)	5 mg, 25 mg, 100 mg, 1 g, 5 g
<b>GLY122</b>	<b>Stage Specific Embryonic Antigen 3 (SSEA-3) / Globopentaoase / Gb<sub>5</sub></b>	
	Gal $\beta$ 1-3GalNAc $\beta$ 1-3Gal $\alpha$ 1-4Gal $\beta$ 1-4Glc	C <sub>32</sub> H <sub>55</sub> NO <sub>26</sub> FW 869.76
		
	Tumor-associated carbohydrate antigen (Ref 7)	5 mg, 25 mg, 100 mg, 1 g, 5 g
<b>GLY130</b>	<b>Stage Specific Embryonic Antigen 4 tetraose (SSEA-4)</b>	Sodium salt
	Neu5Ac $\alpha$ 2-3Gal $\beta$ 1-3GalNAc $\beta$ 1-3Gal	C <sub>31</sub> H <sub>52</sub> N <sub>2</sub> O <sub>24</sub> Na FW 859.73
		
	Tumor-associated carbohydrate antigen (Ref 8, 9)	5 mg, 25 mg, 100 mg, 1 g, 5 g
<b>GLY131</b>	<b>Stage Specific Embryonic Antigen 4 hexaoase (SSEA-4)</b>	Sodium salt
	Neu5Ac $\alpha$ 2-3Gal $\beta$ 1-3GalNAc $\beta$ 1-3Gal $\alpha$ 1-4Gal $\beta$ 1-4Glc	C <sub>43</sub> H <sub>72</sub> N <sub>2</sub> O <sub>24</sub> Na FW 1024.02
		
	Tumor-associated carbohydrate antigen (Ref 8, 9)	5 mg, 25 mg, 100 mg, 1 g, 5 g

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## GlycoBricks<sup>®</sup>: Functionalized oligosaccharides

- Several TACAs can be produced with a terminal reactive group
- A choice of three reactive groups is proposed at the reducing end of the GlycoBricks<sup>®</sup>:
  - Alkynyl group  $-\text{CH}_2-\text{C}\equiv\text{CH}$  (propargyl)
  - Azide group  $-\text{N}=\text{N}^+=\text{N}^-$
  - Aminopropyl group  $-\text{CH}_2-\text{CH}_2-\text{CH}_2-\text{NH}_2$



*X: Spacer is O or N-Acetyl, depending on the oligosaccharide*

- Any customized GlycoBrick<sup>®</sup> request is evaluated

## Quality control

All of the HMOs are analyzed by Nuclear Mass Spectrometry (NMR) and High Performance Anion Exchange Chromatography (HPAEC) for structure validation and determination of their level of purity.

## References

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***This selection of TACAs is extracted from the OligoTech<sup>®</sup> catalogue, Elicityl offer of oligosaccharides and polysaccharides.***

***Full catalogue can be downloaded from [www.elicityl.com](http://www.elicityl.com).***

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