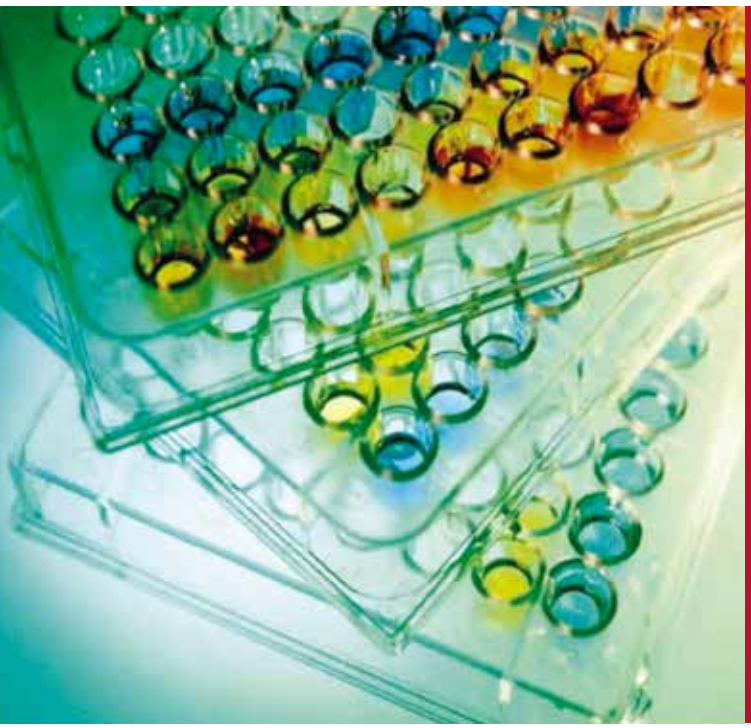
GlycoWell™

PLATES



Transforming cutting-edge chemistry into future´s glycobiology research tools. No need to prepare or purchase complex and expensive glycolipids or glycoproteins for adsorption onto traditional microwells.

The GlycoWell plates are prepared with a homogenous layer of complex carbohydrates, which are covalent linked to the microwells. The plates have a well defined covalent linkage and has a superior stability and reproducibility.

Allow presentation of all carbohydrate epitopes via a 16 – 18 atom long spacer.

Introduction

From cellulose and chitin to starch and glycogen, polysaccharides are enormously abundant and diverse. Monosaccharides and oligosaccharides in the form of glyco-conjugates are even more prevalent. They are found in almost all organisms and play critical roles in protein folding, trafficking and binding, to cell growth, migration and communication, from inflammation and immune response to blood anticoagulation and organ development. In addition, glycosylation is essential for the virulence of many microorganisms. For example, gram-negative bacteria produce lipopolysaccharides, commonly known as endotoxins.

Due to the importance of carbohydrates in various biological/pathological situations it is imperative to have simple, efficient and informative assays for monitoring and studying carbohydrate interactions. GlycoWell plates have different carbohydrate structures linked via stable covalent bonds and offer a reliable, sensitive and robust research tool for studying medically relevant carbohydrate interactions.

The use of GlycoWells carrying Complex Carbohydrates

The plates allow presentation of all carbohydrates epitopes via a 16–18 atom long spacer. The covalent linkage ensures that there are no leakage of carbohydrates into the assay solution.

The plate is ideally suited for protein, virus and bacteria carbohydrate interaction studies.

» Carry carbohydrates evenly distributed on a microwell surface corresponding to 100 µl volume

» Are ideally suited for screening of carbohydrate-binding activities

» Are ideally suited for carbohydrate-protein interaction studies

» Are ideally suited for glycosyltransferase assays.

Our network – your business

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Intended use

The GlycoWell plates are only for research use.

Contents

The kit contains microtiter plates with bound complex carbohydrates to the wells.

Materials required but not supplied

All other reagents.

Principles of the Procedure

» The Optimum conditions have to be determined for each new project.

» All assay reagents should be brought to room temperature prior to use.

» A titration is made by the lectin binding entity (protein, virus, cell etc.)

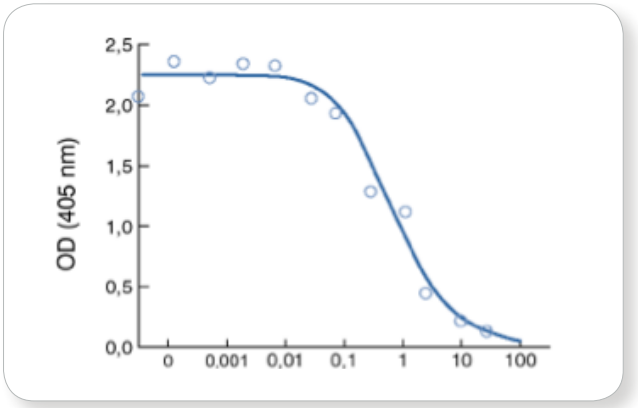
» Incubate for a suitable time, wash 3 times.

» Add a conjugated antibody and incubate for a suitable time, wash 3 times.

» Add substrate and read at a suitable wavelength

Example

» Incubate a fixed concentration of a lectin, cell, virus or bacteria in the presence of varying concentrations of soluble inhibitor, see figure below.



P–fimbriated uropathogenic E. coli binds to Gb4 GlycoWell™ plates (SW-04-001). A soluble disacchride fragment of Gb4, galabiose [α-D–Gal–(1-4)–α-D–Gal–OCH2CH2SiMe3], inhibits binding of the bacteria to the Gb4 GlycoWell™ plate (ref 10).

ARTICLE #	LINKED CARBOHYDRATES	EXAMPEL OF DIFFERENT SUBSTANCES BINDING	REFERENCES:
SWC-01-001	12 different linked carbohydrates	Combi Plate for determining binding of protein, virus, bacteria etc to complex carbohydrates	1. N.Arnberg et al. Virology 2002, 302, 33–43 2. F.Lehman et al. Glycobiology 2004, 14, 959–968 3. O. Schwardt el al. J.Med.Chem. 2009,52, 989–1004 4. H.Attril et al. Biochem.J. 2006, 397, 271–278 5. S.Jorndrup et al. 2005, 79, 41–46 6. M.Knaus et al. Parasitol Res. 2005, 97, 5050–514 7. R.D.Cummings Molec. Bio.Systemes 2009, 5, 1087–1104 8. J.Arnaud et al. Chem. Soc. Rev. 2013, 42, 4798–4813 9. A.Cambi et al. Cur. Opinion Immun. 2005, 17, 346–351 10. U.Nilsson et al. Bioorg. & Med. Chem. 1996, 4, 1809–1817
SW-00-001	N-Acetyl	Blank plate, for negative control	
SW-01-001	a-D-GalNAc	Parasite binding, Ref 6	
SW-01-002	b-D-GalNAc	Parasite binding, Ref 5, 6	
SW-01-003	b-D-GlcNAc	Glycobiology rev, Ref. 7, 8, 9	
SW-01-004	a-Neu5Ac	Adenovirus type 37, Siliac Acids, Siglec 7. Ref 1, 2, 3, 4, 6	
SW-01-005	a-L-Fuc	Parasite binding, Ref 5, 6	
SW-01-006	b-D-Gal	Parasite binding, Ref 6	
SW-01-007	a-D-Gal	Parasite binding, Ref 5	
SW-01-008	b-D-GlcNAc	Glycobiology rev, Ref. 7, 8, 9	
SW-01-009	a-D-Man	Parasite binding, Ref 5, 6	
SW-01-010	b-D-Man	Glycobiology rev, Ref. 7, 8, 9	
SW-02-001	b-Lactose	Parasite binding, Ref 5, 6	
SW-02-002	b-Maltose	Glycobiology rev, Ref. 7, 8, 9	
SW-02-004	b-lacNAc	Glycobiology rev, Ref. 7, 8, 9	
SW-03-001	sialyl-(2-3)lactose	Glycobiology rev, Ref. 7, 8, 9	
SW-03-002	Globotetriose (Gb3)	Parasite binding, Ref 6	
SW-04-001	Globotetraose (Gb4)	P–fimbriated E. coli, Ref 10	
SW-04-002	Sialyl Lewis X	Glycobiology rev, Ref. 7, 8, 9	

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