

Thisbe K. Lindhorst, Publications * † ‡

Diploma Thesis

Synthese von L-Fucose-Derivaten zum Aufbau desoxygenerter Fucosylphosphate, Westfälische Wilhelms-Universität Münster, **1988**.

Doctoral Thesis

Die Synthese von L-Fucose-Derivaten als potentielle Inhibitoren und Modulatoren des GDP- β -L-Fucose-Stoffwechsels, Universität Hamburg, **1991**.

Habilitationsschrift

Kohlenhydrat-Dendrimere, Universität Hamburg, **1998**.

1990-1994

En Route to Thromboxane Compounds from Carbohydrates, I Synthesis of the Unsaturated Sugar Precursors PhD

I. Pelyvás, Th. K. Lindhorst, J. Thiem

Liebigs Ann. Chem. **1990**, 761-769.

The Synthesis of 3-Deoxy-L-fucose (3,6-Dideoxy-L-xylo-hexose) PhD

Th. K. Lindhorst, J. Thiem

Liebigs Ann. Chem. **1990**, 1237-1241.

Synthesis of 4-deoxy and 4-deoxy-4-halogeno derivatives of L-fucose as potential enzyme inhibitors PhD

Th. K. Lindhorst, J. Thiem

Carbohydr. Res. **1991**, 209, 119-129.

Merck-Schuchardt Lectureship 1990 non peer rev. PhD

Vortragsreise von Prof. H. C. Heathcock, Berkeley: "Mannich Magic"

W. Klaffke, Th. K. Lindhorst

Kontakte **1991**, 1, 48-52.

Regioselective Acylation of Carbohydrates with 1-Acyloxy-1H-benzotriazoles PhD

I. F. Pelyvás, Th. K. Lindhorst, H. Streicher, J. Thiem

Synthesis **1991**, 1015-1018.

Liquid Crystalline 6-Deoxy Glycosides PhD

V. Vill, Th. K. Lindhorst, J. Thiem

J. Carbohydr. Chem. **1991**, 10, 771-786.

Synthesis and properties of sulfated alkyl glycosides PhD

Th. Böcker, Th. K. Lindhorst, J. Thiem, V. Vill

Carbohydr. Res. **1992**, 230, 245-256.

* Papers originating from my PhD (Prof. Thiem group) or Postdoc (Prof. Withers group) period, respectively, are marked accordingly.

† Non peer-reviewed papers are specifically indicated.

‡ Reviews and book chapters are denoted accordingly. (Book reviews and conference reports are not listed.)

**En Route to Thromboxane Compounds from Carbohydrates, II
Halolactonization of 4-C-Branched Alkyl Hex-2-enopyranosides** PhD

I. F. Pelyvás, Th. K. Lindhorst, G. Batta, J. Thiem
Liebigs Ann. Chem. **1992**, 33-37.

Jahresrückblick "Kohlenhydratchemie 1991" non peer rev. PhD

Th. K. Lindhorst
Nachr. Chem. Techn. Lab. **1992**, 40, 166-171.

Synthetic approaches to 2-deoxyglycosyl phosphates PhD

J. Niggemann, Th. K. Lindhorst, M. Walfort, L. Laupichler, H. Sajus, J. Thiem
Carbohydr. Res. **1993**, 246, 173-183.

Synthesis of GDP 4,6-Dideoxy- β -L-xylohexopyranose (GDP-4-deoxy- β -L-fucose)

B. Leon, Th. K. Lindhorst, A. Rieks-Everdiking, W. Klaffke
Synthesis **1994**, 689-691.

**The Acid/Base Catalyst in the Exoglucanase/Xylanase from *Cellulomonas fimi* Is
Glutamic Acid 127: Evidence from Detailed Kinetic Studies of Mutants** Postdoc

A. M. MacLeod, Th. K. Lindhorst, S. G. Withers, R. A. J. Warren
Biochemistry **1994**, 33, 6371-6376.

1995

**Syntheses of 4'-deoxy- α -maltosyl fluoride and 4''-deoxy- α -maltotriosyl fluoride as
probes of α -glucanotransferase mechanisms** Postdoc

Th. K. Lindhorst, C. Braun, S. G. Withers
Carbohydr. Res. **1995**, 268, 93-106.

Trends in Organischer Chemie: Kohlenhydratchemie non peer rev.

Th. K. Lindhorst
Nachr. Chem. Techn. Lab. **1995**, 43, 158-163.

Solvent-free Preparation of Glycosyl Isothiocyanates

Th. K. Lindhorst, C. Kieburg
Synthesis **1995**, 1228-1230.

1996

**Identification of Asp 549 as the Catalytic Nucleophile of Glycogen-Debranching
Enzyme via Trapping of the Glycosyl-Enzyme Intermediate** Postdoc

C. Braun, Th. K. Lindhorst, N. Madsen, S. G. Withers
Biochemistry **1996**, 35, 5458-5463.

**Glycoating of Oligovalent Amines. Synthesis of Thiourea-Bridged Cluster
Glycosides from Glycosyl Isothiocyanates**

Th. K. Lindhorst, C. Kieburg
Angew. Chem. **1996**, 108, 2083-2086; *Angew. Chem. Int. Ed. Engl.* **1996**, 35, 1953-1956.

Glycodendrimere non peer rev.

Th. K. Lindhorst
Nachr. Chem. Techn. Lab. **1996**, 44, 1073-1079.

1997

An Unusual Side Reaction in the Rearrangement of 3,4,6-Tri-O-acetyl-1,2-O-(allyloxyethylidene)- β -D-mannopyranose with TMS-Triflate: Formation of an α -(1 \rightarrow 2)-Linked Disaccharide

Th. K. Lindhorst

J. Carbohydr. Chem. **1997**, *16*, 237-243.

Inhibition of L-Fucokinase from Rat Liver by L-Fucose Analogues *in vitro*

R. Zeitler, S. Danneschewski, Th. K. Lindhorst, J. Thiem, W. Reutter

J. Enzyme Inhibition **1997**, *11*, 265-273.

Synthesis of Carbon-Backbone-Elongated GDP-L-Fucose Derivatives as Substrates for Fucosyltransferase-Catalysed Reactions

C. Vogel, C. Bergemann, A.-J. Ott, Th. K. Lindhorst, J. Thiem, W. V. Dahlhoff, C. Hällgren, M. M. Palcic, O. Hindsgaul

Liebigs Ann./Recueil **1997**, 601-612.

Glycodendrimer Synthesis Without Using Protecting Groups

C. Kieburg, Th. K. Lindhorst

Tetrahedron Lett. **1997**, *38*, 3885-3888.

Biotransformation of Ergot Alkaloids by Haloperoxidase from *Streptomyces aureofaciens*: Stereoselective Acetoxylation and Propionoxylation

V. Křen, L. Kawuloková, P. Sedmera, M. Polasek, Th. K. Lindhorst, K.-H. van Pée

Liebigs Ann./Recueil **1997**, 2379-2383.

A New Type of Carbohydrate Clustering: Synthesis of a Pentavalent Glycocluster Based on a Carbohydrate Core

C. Kieburg, M. Dubber, Th. K. Lindhorst

Synlett **1997**, 1447-1449.

1998

The Syntheses of δ -NCS-Butyl α -L-fucosides and fucobiosides and their Clustering to Triantennary Glycomimetics

Th. K. Lindhorst, M. Ludewig, J. Thiem

J. Carbohydr. Chem. **1998**, *17*, 1131-1149.

Enzymatic Glycosylation of Branched Symmetrical Non-carbohydrate Polyols

C. Kieburg, Th. K. Lindhorst, V. Křen

J. Carbohydr. Chem. **1998**, *17*, 1239-1247.

Inhibition of the type 1 fimbriae-mediated adhesion of *Escherichia coli* to erythrocytes by multiantennary α -mannosyl clusters: The effect of multivalency

Th. K. Lindhorst, C. Kieburg, U. Krallmann-Wenzel

Glycoconjugate J. **1998**, *15*, 605-613.

GlcNAc-terminated glycodendrimers form defined precipitates with the soluble dimeric receptor of rat natural killer cells, sNKR-P1A. K. Bezouška*, V. Křen, C. Kieburg, Th. K. Lindhorst, *FEBS Lett.* **1998**, *426*, 243-247.

Rejected in 2013 due to K. Bezouška's misconduct.

α -Mannosyl Clusters Scaffolded on Azamacrocycles: Synthesis and Inhibitory Properties in the Adhesion of Type 1 Fimbriated *Escherichia coli* to Erythrocytes

B. König, T. Fricke, A. Waßmann, U. Krallmann-Wenzel, Th. K. Lindhorst
Tetrahedron Lett. **1998**, 39, 2307-2310.

Structure Analysis of Trivalent Glycoclusters by Post-source Decay Matrix-assisted Laser Desorption/Ionization Mass Spectrometry

V. Havlíček, C. Kieburg, P. Novák, K. Bezouška, Th. K. Lindhorst
J. Mass Spectrom. **1998**, 33, 591-598.

Synthesis of chiral carbohydrate-centered dendrimers

M. Dubber, Th. K. Lindhorst
Chem. Commun. **1998**, 1265-1266.

Synthesis of octopus glycosides: core molecules for the construction of glycoclusters and carbohydrate-centered dendrimers

M. Dubber, Th. K. Lindhorst
Carbohydr. Res. **1998**, 310, 35-41.

Multivalent ligands for the mannose-specific lectin on type 1 fimbriae of *Escherichia coli*: Syntheses and testing of trivalent α -D-mannoside clusters

S. Kötter, U. Krallmann-Wenzel, S. Ehlers, Th. K. Lindhorst
J. Chem. Soc., Perkin Trans. 1 **1998**, 2193-2200.

Effect of *p*-Substitution of Aryl α -D-mannosides on Inhibiting Mannose-sensitive Adhesion of *Escherichia coli* -Syntheses and Testing

Th. K. Lindhorst, S. Kötter, J. Kubisch, U. Krallmann-Wenzel, S. Ehlers, V. Křen
Eur. J. Org. Chem. **1998**, 1669-1674.

Synthese und Anwendungsmöglichkeiten multivalenter Glykokonjugate

Th. K. Lindhorst in:
Jahrbuch der Akademie der Wissenschaften zu Göttingen, Vandenhoeck & Ruprecht in Göttingen **1998**, 153-155.

1999

Multivalent neoglycoconjugates for the inhibition of mannose-sensitive carbohydrate-protein interactions

Th. K. Lindhorst in: *Bioorganic Chemistry – Highlights and New Aspects*, U. Diederichsen, Th. K. Lindhorst, L. Wessjohann, B. Westermann (Eds.), Wiley-VCH, Weinheim **1999**, pp 133-149.

Enzymatic synthesis of *p*-nitrophenyl β -chitobioside

J. Kubisch, L. Weignerová, S. Kötter, Th. K. Lindhorst, P. Sedmera, V. Křen
J. Carbohydr. Chem. **1999**, 18, 975-984.

Synthesis and anomeric stability of (1 \rightarrow 6)-thiourea-linked pseudooligosaccharides

J. M. Benito, C. Ortiz Mellet, K. Sadalapure, Th. K. Lindhorst, J. Defaye, J. M. Carcía Fernández
Carbohydr. Res. **1999**, 320, 37-48.

Synthesis of selectively functionalized carbosilane dendrimers with a carbohydrate core

M. M. K. Boysen, Th. K. Lindhorst
Org. Lett. **1999**, *1*, 1925-1927.

2000

An unusual side reaction in the perallylation of a glucoside brought about by sodium hydride

M. M. K. Boysen, Th. K. Lindhorst
J. Carbohydr. Chem. **2000**, *19*, 407-412.

Struktur und Funktion von Kohlenhydraten non peer rev.

Th. K. Lindhorst review
Chem. Unserer Zeit **2000**, *34*, 38-52.

Wenn Zucker-Attrappen Bakterien zum Narren halten non peer rev.

Th. K. Lindhorst
Spektrum der Wissenschaft **2000**, 16-20.

Cluster Mannosides as Inhibitors of Type 1 Fimbriae-Mediated Adhesion of *Escherichia coli*: Pentaerythritol Derivatives as Scaffolds

Th. K. Lindhorst, M. Dubber, U. Krallmann-Wenzel, S. Ehlers
Eur. J. Org. Chem. **2000**, 2027-2034.

Glucose-based AB₂-Building Blocks for the Construction of Branched Glycopeptidomimetics

C. Kieburg, K. Sadalpure, Th. K. Lindhorst
Eur. J. Org. Chem. **2000**, 2035-2040.

A General Entry into Glycopeptide "Dendrons"

K. Sadalpure, Th. K. Lindhorst
Angew. Chem. **2000**, *112*, 2066-2069; *Angew. Chem. Int. Ed.* **2000**, *39*, 2010-2013.

Synthesis of Carbohydrate-centered Oligosaccharide Mimetics Equipped with a Functionalized Tether

M. Dubber, Th. K. Lindhorst
J. Org. Chem. **2000**, *65*, 5275-5281.

2001

Exploration of Reductive Amination for the Synthesis of Cluster Glycosides

M. Dubber, Th. K. Lindhorst
Synthesis **2001**, 327-330.

Struktur und Funktion von Kohlenhydraten non peer rev.

Th. K. Lindhorst
Naturwissenschaften im Unterricht Chemie **2001**, *62*, 9-12.

A Modular System for the Synthesis of Multivalent Oligosaccharide Mimetics

A. Patel, Th. K. Lindhorst
J. Org. Chem. **2001**, *66*, 2674-2680.

Trivalent α -D-mannoside clusters as inhibitors of type-1 fimbriae-mediated adhesion of *Escherichia coli*: structural variation and biotinylation

Th. K. Lindhorst, S. Kötter, U. Krallmann-Wenzel, S. Ehlers
J. Chem. Soc., Perkin Trans. 1 **2001**, 823-831.

Glycodendrimers review

N. Röckendorf, Th. K. Lindhorst
Top. Curr. Chem. **2001**, 217, 201-238.

Glycodendrimeric ligands of C-type lectin receptors as therapeutic agents in experimental cancer

M. Pospíšil, L. Vannucci, A. Fišerová, K. Krausová, O. Horváth, V. Křen, F. Mosca,
Th. K. Lindhorst, K. Sadalapure, K. Bezouška
Adv. Exp. Med. Biol. **2001**, 495, 343-347.

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Binding inhibition of type 1 fimbriae to human granulocytes: A flow cytometric inhibition assay using trivalent cluster mannosides

A. K. Horst, S. Kötter, Th. K. Lindhorst, A. Ludwig, E. Brandt, C. Wagener
Med. Microbiol. Immunol. **2001**, 190, 145-149.

Synthesis of a Carbohydrate-Centered C-Glycoside Cluster

M. Dubber, Th. K. Lindhorst
J. Carbohydr. Chem. **2001**, 20, 755-760.

Trehalose-Based Octopus Glycosides for the Synthesis of Carbohydrate-Centered PAMAM Dendrimers and Thiourea-Bridged Glycoclusters

M. Dubber, Th. K. Lindhorst
Org. Lett. **2001**, 3, 4019-4022.

Antitumor and Antimicrobial Glycoconjugates book chapter

Th. K. Lindhorst in: *Glycoscience, Chemistry and Chemical Biology*, Vol. III, B. Fraser-Reid, K. Tatsuta, J. Thiem (Eds.), Springer, Berlin **2001**, pp 2393-2440.

Complex Encounters at the Macrophage-Mycobacterium Interface: Studies on the Role of the Mannose Receptor and CD14 in experimental Infection Models with *Mycobacterium avium*

N. Reiling, K. Klug, U. Krallmann-Wenzel, R. Laves, S. M. Goyert, M. E. Taylor,
Th. K. Lindhorst, S. Ehlers
Immunobiol. **2001**, 204, 558-571.

2002

Synthesis of "Mixed Type" Oligosaccharide Mimetics Based on a Carbohydrate Scaffold

A. Patel, Th. K. Lindhorst
Eur. J. Org. Chem. **2002**, 79-86.

Artificial Multivalent Sugar Ligands to Understand and Manipulate Carbohydrate-Protein Interactions review

Th. K. Lindhorst
Top. Curr. Chem. **2002**, 218, 201-235.

Reactivity Tournament of Isothiocyanato-Functionalized Saccharides with 1,6-Diamino-3,6-oxaocane

M. Walter, Th. K. Lindhorst

Monatshefte für Chemie, Chemical Monthly, **2002**, 133, 473-483 (cover picture).

Molecular Dynamics Simulations of Glycoclusters and Glycodendrimers

C.-W. von der Lieth, M. Frank, Th. K. Lindhorst

Rev. Mol. Biotech. **2002**, 90, 311-337.

Dendrimers editorial

Th. K. Lindhorst, S. Dieckmann

J. Biotechnol. **2002**, 90, 157-158.

Trivalent Cluster Mannosides with Aromatic Partial Structure as Ligands for the Type 1 Fimbrial Lectin of *Escherichia coli*

N. Röckendorf, O. Sperling, Th. K. Lindhorst

Austr. J. Chem. **2002**, 55, 87-93 (cover picture).

2003

"Sugaring" carbosilane dendrimers via hydrosilylation

M. Boysen, Th. K. Lindhorst

Tetrahedron **2003**, 59, 3895-3898.

Effects of *N*-acetyl-glucosamine-coated glycodendrimers as biological modulators in the B16F10 melanoma model *in vivo*.

L. Vannucci*, A. Fišerová, K. Sadalpure, Th. K. Lindhorst, M. Kuldová, P. Rossmann, O.

Horváth, V. Křen, P. Krist, K. Bezouška, M. Luptovcová, F. Mosca, M. Pospíšil

Int. J. Oncology **2003**, 23, 285-296.

Corrected in 2013 due to K. Bezouška's misconduct.

Glycerol and Glycerol Glycol Glycodendrimers

M. M. K. Boysen, K. Elsner, O. Sperling, Th. K. Lindhorst

Eur. J. Org. Chem. **2003**, 4376-4386.

2004

Fluorescent Labelled Thiourea-Bridged Glycodendrons

P. Krist, L. Vannucci, M. Kuzma, P. Man, K. Sadalpure, A. Patel, K. Bezouška, M. Pospíšil,

L. Petruš, Th. K. Lindhorst, V. Křen*

ChemBioChem **2004**, 5, 445-452.

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Functional Evaluation of Carbohydrate-Centred Glycoclusters by Enzyme-Linked Lectin Assay: Ligands for Concanavalin A

M. Köhn, J. M. Benito, C. Ortiz Mellet, Th. K. Lindhorst, J. M. García Fernández

ChemBioChem **2004**, 5, 771-777.

Glyco-SAMs as Glycocalyx Mimetics:

Synthesis of L-Fucose and D-Mannose-Terminated Building Blocks

M. Kleinert, N. Röckendorf, Th. K. Lindhorst

Eur. J. Org. Chem. **2004**, 3931-3940.

Glucuronic Acid Derivatives as Branching Units for the Synthesis of Glycopeptide Mimetics

N. Röckendorf, Th. K. Lindhorst
J. Org. Chem. **2004**, *69*, 4441-4444.

2006

Regioselective Phthalimidopropyl-Modification of Carbohydrates in One Step

C. Heidecke, Th. K. Lindhorst
Synthesis **2006**, 161-165.

Synthesis of Cluster Mannosides Carrying a Photolabile Diazirine Group

M. Walter, M. Wiegand, Th. K. Lindhorst
Eur. J. Org. Chem. **2006**, 719-728.

A Simple Method for the Preparation of Glycosyl Isothiocyanates

M. Kühne, Z. Györgydeák, Th. K. Lindhorst
Synthesis **2006**, 949-951.

A Modular System for the Preparation of Diazirine-Labeled Mannose Derivatives Using Thiourea Bridging

M. Walter, Th. K. Lindhorst
Synthesis **2006**, 952-958.

Chromophor-supported Purification in Parallel Synthesis (CSP)

I. Aumüller, Th. K. Lindhorst
Eur. J. Org. Chem. **2006**, 1103-1108 (cover picture).

Multivalent glycomimetics: Synthesis of nonavalent mannoside clusters with variation of spacer properties

A. Patel, Th. K. Lindhorst
Carbohydr. Res. **2006**, *341*, 1657-1668 (special issue).

Synthesis of Photoactive α -Mannosides and Mannosyl Peptides and Their Evaluation for Lectin Labeling

M. Wiegand, Th. K. Lindhorst
Eur. J. Org. Chem. **2006**, 4841-4851.

Oligomannoside mimetics by glycosylation of 'octopus glycosides' and their investigation as inhibitors of type 1 fimbriated-mediated adhesion of *Escherichia coli*

M. Dubber, O. Sperling, Th. K. Lindhorst
Org. Biomol. Chem. **2006**, *4*, 3901-3912 (inside cover).

Evaluation of the carbohydrate recognition domain of the bacterial adhesin FimH: design, synthesis and binding properties of mannoside ligands

O. Sperling, A. Fuchs, Th. K. Lindhorst
Org. Biomol. Chem. **2006**, *4*, 3913-3922 (inside cover).

Synthesis of Functionalized Amphiphilic Glycoconjugates and Glycoclusters

M. Dubber, A. Patel, K. Sadalapure, I. Aumüller, Th. K. Lindhorst
Eur. J. Org. Chem. **2006**, 5357-5366.

2007

Functionalization of oligosaccharide mimetics and multimerization using squaric diester-mediated coupling

O. Sperling, M. Dubber, Th. K. Lindhorst

Carbohydr. Res. **2007**, *342*, 696-703.

Synthesis of new polyether glycodendrons as oligosaccharide mimetics

K. Elsner, M. M. K. Boysen, Th. K. Lindhorst

Carbohydr. Res. **2007**, *342*, 1715-1725.

Iterative Synthesis of Spaced Glycodendrons as Oligomannoside Mimetics and Evaluation of Their Antiadhesive Properties

C. Heidecke, Th. K. Lindhorst

Chem. Eur. J. **2007**, *13*, 9056-9067.

2008

Differential effects of oligosaccharides on the hydration of simple cations

M. Eriksson, Th. K. Lindhorst, B. Hartke

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The hydration features of carbohydrate determinants of Lewis antigens

M. Reynolds, A. Fuchs, Th. K. Lindhorst, S. Pérez

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Antitumor and Antimicrobial Glycoconjugates book chapter, 2nd ed

Th. K. Lindhorst in: *Glycoscience, Chemistry and Chemical Biology*, 2nd completely revised edition, Vol. III, B. O. Fraser-Reid, K. Tatsuta, J. Thiem, G. Coté, S. Flitsch, Y. Ito, H. Kondo, S. Nishimura, B. Yu (Eds.), Springer, Berlin **2008**, pp 2545-2587.

A modular approach for the construction and modification of glyco-SAMs utilizing 1,3-dipolar cycloaddition

M. Kleinert, T. Winkler, A. Terfort, Th. K. Lindhorst

Org. Biomol. Chem. **2008**, *6*, 2118-2132.

Synthesis of glycocluster peptides

H. A. Shaikh, F. D. Sönnichsen, Th. K. Lindhorst

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M. Hartmann, Th. K. Lindhorst

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M. Hartmann, Th. K. Lindhorst

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2009

Ein Platz an der Sonne non peer rev.

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Th. K. Lindhorst, M. Hartmann
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Th. K. Lindhorst, M. Märten
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A. Schierholt, Th. K. Lindhorst
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I. B. Aumüller, Th. K. Lindhorst
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A. Schierholt, H. A. Shaikh, J. Schmidt-Lassen, Th. K. Lindhorst
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Th. K. Lindhorst
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2010

A kit for the investigation of live *Escherichia coli* cell adhesion to glycosylated surfaces

M. Hartmann, A. K. Horst, P. Klemm, Th. K. Lindhorst
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C. Grabosch, M. Kleinert, Th. K. Lindhorst
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J. Wehner, Th. K. Lindhorst
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Synthesis in the glycosciences editorial

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Specialist Periodical Reports Carbohydrate Chemistry preface

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A. Schierholt, M. Hartmann, Th. K. Lindhorst
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