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Lipophilic iminosugars : synthesis and evaluation as inhibitors of glucosylceramide metabolism

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List of Publications

Glycosylation of Cyclitols: Synthesis of Neamine-type Aminoglycosides

Verhelst, S.H.L.; Magnee, M.E.; Wennekes, T.; Wiedenhof, W.; van der Marel, G.A.; Overkleeft, H.S.; van Boeckel, C.A.A.; van Boom, J.H.

European Journal of Organic Chemistry **2004**, 11, 2404 – 2410.

Synthesis of Orthogonally Protected 2-Deoxystreptamine Stereoisomers

Verhelst, S.H.L.; Wennekes, T.; van der Marel, G.A.; Overkleeft, H.S.; van Boeckel, C.A.A.; van Boom, J.H.

Tetrahedron **2004**, 60, 2813 – 2822.

Transformation of Carbohydrate Derived 4-Azidopentanal into Highly Functionalized Pyrrolidines Via a Tandem Staudinger/aza-Wittig/Ugi Multicomponent Reaction

Bonger, K.M.; Wennekes, T.; de Lavoie, S.V.P.; Esposito, D.; van den Berg, R.J.B.H.N.; Litjens, R.E.J.N.; van der Marel, G.A.; Overkleeft, H.S.

Qsar & Combinatorial Science **2006**, 25, 491 – 503.

Development of Adamantan-1-yl-methoxy-functionalized 1-Deoxynojirimycin Derivatives as Selective Inhibitors of Glucosylceramide Metabolism in Man

Wennekes, T.; van den Berg, R.J.B.H.N.; Donker, W.; van der Marel, G.A.; Strijland, A.; Aerts, J.M.F.G.; Overkleeft, H.S.

Journal of Organic Chemistry **2007**, 72, 1088 – 1097.

Pharmacological Inhibition of Glucosylceramide Synthase Enhances Insulin Sensitivity

Aerts, J.M.F.G.; Ottenhoff, R.; Powlson, A.S.; Grefhorst, A.; van Eijk, M.; Dubbelhuis, P.F.; Aten, J.; Kuipers, F.; Serlie, M. J.; Wennekes, T.; Sethi, J.K.; O'Rahilly, S.; Overkleeft, H.S.

Diabetes **2007**, 56, 1341 – 1349.

Identification of the Non-lysosomal Glucosylceramidase as β -Glucosidase 2

Boot, R.G.; Verhoek, M.; Donker-Koopman, W.; Strijland, A.; van Marle, J.; Overkleeft, H.S.; Wennekes, T.; Aerts, J.M.F.G.

Journal of Biological Chemistry **2007**, 282, 1305 – 1312.

N-Azidoacetylmannosamine-mediated Chemical Tagging of Gangliosides

Bussink, A.P.; van Swieten, P.F.; Ghauharali, K.; Scheij, S.; van Eijk, M.; Wennekes, T.; van der Marel, G.A.; Boot, R.G.; Aerts, J.M.F.G.; Overkleeft, H.S.

Journal of Lipid Research **2007**, 48, 1417 – 1421.

The Effect of Lewis Acids on the Stereochemistry in the Ugi Three-Component Reaction with D-lyxo-Pyrroline

Bonger, K.M.; Wennekes, T.; Filippov, D.V.; Lodder, G.; van der Marel, G.A.; Overkleeft, H.S.
European Journal of Organic Chemistry **2008**, 3678 – 3688.

Large-scale Synthesis of the Glucosylceramide Synthase Inhibitor N-[5-(Adamantan-1-yl-methoxy)-pentyl]-1-deoxynojirimycin

Wennekes, T.; Lang, B.; Leeman, M.; van der Marel, G.A.; Smits, E.; Weber, M.; van Wiltenburg, J.; Wolberg, M.; Aerts, J.M.F.G.; Overkleeft, H.S.
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Improved Glycemic Control in Obese Rodent Models of Type 2 Diabetes through Dual Action of a Lipophilic 1-Deoxynojirimycin

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Manuscript submitted for publication

Synthesis and Evaluation of Lipophilic Aza-C-glycosides as Inhibitors of Glucosylceramide Metabolism

Wennekes, T.; van den Berg, R.J.B.H.N.; Boltje T. J.; Donker-Koopman, W.E.; Kuijper, B.; van der Marel, G.A.; Strijland, A.; Verhagen, C.P.; Aerts, J.M.F.G.; Overkleeft, H.S.
Manuscript in preparation

Synthesis and Evaluation of Dimeric Lipophilic Iminosugars as Inhibitors of Glucosylceramide Metabolism

Wennekes, T.; van den Berg, R.J.B.H.N.; Bonger, K.M.; Donker-Koopman, W.E.; Ghisaidoobe, A.; van der Marel, G.A.; Strijland, A.; Aerts, J.M.F.G.; Overkleeft, H.S.
Manuscript in preparation

Human Glycosphingolipids – Their Metabolism and Functions in Health and Disease

Wennekes, T.; van den Berg, R.J.B.H.N.; Boot R.G.; van der Marel, G.A.; Aerts, J.M.F.G.; Overkleeft, H.S.
Manuscript in preparation

Synthesis of Lipophilic Iminosugars with a Tandem Staudinger/aza-Wittig/Ugi Multicomponent Reaction and Evaluation as Glucosylceramide Metabolism Inhibitors

Wennekes, T.; Bonger, K.M.; van den Berg, R.J.B.H.N.; Poolman, J.; Donker-Koopman, W.E.; van der Marel, G.A.; Strijland, A.; Vogel, K.; Aerts, J.M.F.G.; Overkleeft, H.S.
Manuscript in preparation

Curriculum Vitae



Tom Wennekes was born in Middelburg on the 19th of June 1979. After secondary HAVO education at the Maurick College in Vught, he started with a bachelor equivalent (HLO) education in chemistry at the Hogeschool in Eindhoven in 1997. As part of this study he conducted an internship at the bio-organic synthesis group of Prof. dr. J.H. van Boom from January to June 2000. During this internship he synthesized conjugates of peptide nucleic acids and artificial ribonucleases under the supervision of dr. B.E.A. Burm and dr. M.C. de Koning. After obtaining his ingenieurs degree in June 2000, he started his academic studies in chemistry at Leiden University

in August of that same year. From August 2001 to September 2002 undergraduate research was conducted at the bio-organic synthesis group of Prof. dr. J.H. van Boom and Prof. dr. H.S. Overkleeft. This research under the supervision of dr. S.H.L. Verhelst resulted in the master thesis 'Synthesis of aminoglycoside analogs and conjugates'. In December 2002 Tom obtained his doctorandus (Master of Science) degree.

After a short period working as a research assistant in the bio-organic synthesis group, Tom was affiliated with Leiden University as a Ph.D. student from October 2003 until April 2008. The work described in this thesis was conducted under the supervision of Prof. dr. G.A. van der Marel and Prof. dr. H.S. Overkleeft in close cooperation with the group of Prof. dr. J.M.F.G. Aerts of the University of Amsterdam, and with financial support from Macrozyme B.V.

Parts of the work described in the thesis were communicated by means of oral presentations at the annual Holland Research School of Molecular Chemistry (HRSMC) symposium in Amsterdam (March 2004), Norwich Carbohydrate Chemistry Centre meeting in Norwich, UK (May 2005), the 23rd International Carbohydrate Symposium in Whistler, Canada (July 2006), the annual meeting of the HRSMC 'Design and Synthesis' division in Lunteren (October 2006) and the Gordon Research Conference on Carbohydrates in Tilton, USA (June 2007). A poster presentation at the HRSMC meeting in Lunteren (October 2005) was awarded with a Syncom posterprize.

January 2009, Tom will commence his post-doctoral studies as a NWO-Rubicon fellow at the University of British Columbia in Vancouver (Canada) at the research group of Prof. dr. S.G. Withers.

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After quite some years, finally arriving at this page and looking back: it has been a wild roller coaster ride.

‘So it goes’

Kurt Vonnegut

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