Universiteit
Leiden
The Netherlands

Inverse electron demand Diels-Alder pyridazine elimination: synthetic tools for chemical immunology

Geus, M.A.R. de

Citation

Geus, M. A. R. de. (2021, October 7). *Inverse electron demand Diels-Alder pyridazine elimination: synthetic tools for chemical immunology*. Retrieved from https://hdl.handle.net/1887/3215037

Version:	Publisher's Version
License:	Licence agreement concerning inclusion of doctoral thesis in the Institutional Repository of the University of Leiden
Downloaded from:	https://hdl.handle.net/1887/3215037

Note: To cite this publication please use the final published version (if applicable).

List of publications

1) **Synthetic methodology towards allylic *trans*-cyclooctene-ethers enables modification of carbohydrates: bioorthogonal manipulation of the *lac* repressor**
de Geus, M. A. R.; Groenewold G. J. M.; Maurits E.; Araman, C.; van Kasteren, S. I.
Chem. Sci. **2020**, *11* (37), 10175-10179.

2) **Conditionally controlling human TLR2 activity via *trans*-cyclooctene caged ligands**
van de Graaff, M. J.; Oosenbrug, T.; Marqvorsen, M. H. S.; Nascimento, C. R.; de Geus, M. A. R.; Manoury, B.; Ressing, M. E.; van Kasteren, S. I.
Bioconjug. Chem. **2020**, *31* (6), 1685-1692.

3) **Fluorogenic bifunctional *trans*-cyclooctenes as efficient tools for investigating click-to-release kinetics**
de Geus, M. A. R.[#]; Maurits, E.[#]; Sarris, A. J. C.[#]; Hansen, T.; Kloet, M. S.; Kamphorst, K.; ten Hoeve, W.; Robillard, M. S.; Pannwitz, A.; Bonnet, S. A.; Codée, J. D. C.; Filippov, D. V.; Overkleeft, H. S.; van Kasteren, S. I.
Chem. Eur. J. **2020***, 26* (44), 9900-9904.

4) **Fast and pH-independent elimination of *trans*-cyclooctene by using aminoethyl-functionalized tetrazines**
Sarris, A. J. C.; Hansen, T.; de Geus, M. A. R.; Maurits, E.; Doelman, W.; Overkleeft, H. S.; Codée, J. D. C.; Filippov, D. V.; van Kasteren, S. I.
Chem. Eur. J. **2018**, *24* (68), 18075-18081.

5) **Click-to-release from *trans*-cyclooctenes: mechanistic insights and expansion of scope from established carbamate to remarkable ether cleavage**
Versteegen, R. M.; ten Hoeve, W.; Rossin, R.; de Geus, M. A. R.; Janssen, H. M.; Robillard, M. S.
Angew. Chem. Int. Ed. **2018**, *57* (33), 10494–10499.

6) **Chemical control over T-cell activation *in vivo* using deprotection of *trans*-cyclooctene-modified epitopes**
de Geus, M. A. R.[#]; van der Gracht, A. M. F.[#]; Camps, M. G. M.; Ruckwardt, T. J.; Sarris, A. J. C.; Bremmers, J.; Maurits, E.; Pawlak, J. B.; Posthoorn, M. M.; Bonger, K. M.; Filippov, D.V.; Overkleeft, H.S.; Robillard, M.S.; Ossendorp, F.; van Kasteren, S.I.
ACS Chem. Biol. **2018**, *13* (6), 1569–1576.

7) **Human alpha galactosidases transiently produced in *nicotiana benthamiana* leaves: new insights in substrate specificities with relevance for Fabry disease**
Kytidou, K.; Beenakker, T. J. M.; Westerhof, L. B.; Hokke, C. H.; Moolenaar, G. F.; Goosen, N.; Mirzaian, M.; Ferraz, M. J.; de Geus, M.; Kallemeijn, W. W.; Overkleeft, H. S.; Boot, R. G.; Schots A.; Bosch, D.; Aerts, J. M. F. G.
Front. Plant Sci. **2017**, *8, 1026*.

8) **Synthesis of 6-hydroxysphingosine and α-hydroxy ceramide using a cross-metathesis strategy**
Wisse, P.; de Geus, M. A. R.; Cross, G.; van den Nieuwendijk, A. M. C. H.; van Rooden, E. J.; van den Berg, R. J. B. H. N.; Aerts, J. M. F. G.; van der Marel, G. A.; Codée, J. D. C.; Overkleeft, H. S.
J. Org. Chem. **2015**, *80* (14), 7258–7265.

[#] denotes equal contribution.

0000-0002-1639-5890

Curriculum Vitae

Mark Alexander Ruben de Geus was born on the 25th of August 1990 in Nootdorp, the Netherlands. After completing his secondary education (VWO, cum laude) at the Stanislas College Delft in 2009, he commenced his studies at Leiden University. In 2012, he obtained his Bachelor of Science (BSc) degree in Bio-Pharmaceutical Sciences after an internship in the group of Prof. dr. A.P. IJzerman where he worked on the synthesis of adenosine A_1 receptor antagonists.

He enrolled for the Master's program Research in Chemistry – Design & Synthesis at Leiden University in September 2012 and worked on two research internships. In the Bio-organic Synthesis group, he worked on the synthesis of sphingolipids using a cross-metathesis strategy under supervision of Prof. dr. G.A. van der Marel, Prof. dr. J.D.C. Codée and Prof. dr. H.S. Overkleeft. Subsequently, he studied α-galactosidase A using aziridine-type activity-based probes in the Medical Biochemistry department under supervision of Prof. dr. J.M.F.G. Aerts. The Master of Science (MSc) degree was obtained in July 2015 (cum laude).

From Januari 2016 until October 2020, he conducted his PhD studies at Leiden University in the Bio-organic Synthesis group under supervision of Dr. S.I. van Kasteren and Prof. dr. H.S. Overkleeft. Parts of the research described in this Thesis were presented on posters at CHAINS (Veldhoven, The Netherlands, 2016-2019), Molecular Machines Nobel Prize Conference (Groningen, The Netherlands 2017), 4th Chemical Immunology Conference (Amsterdam, The Netherlands, 2018) and EuroCARB (Leiden, The Netherlands, 2019). Oral presentations about his research were presented at the KNCV International Symposium on Organic Chemistry (Wageningen, The Netherlands, 2018) and at the 18th RSC Chemical Biology and Bioorganic Group (CBBG) conference (Firbush, United Kingdom, 2019).

In Januari 2021, Mark started working as a postdoctoral fellow in the group of Prof. dr. C.P.R. Hackenberger at the Leibniz Institute for Molecular Pharmacology (FMP) in Berlin, Germany.