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Design, synthesis and application of sulfur-containing heterocycles for the inhibition of glycosidases and glycosyltransferases

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List of publications

Fabry Disease: Molecular Basis, Pathophysiology, Diagnostics and Potential Therapeutic Directions.

Kok, K.; Zwiers, K. C.; Boot, R. G.; Overkleeft, H. S.; Aerts, J. M. F. G.; Artola, M.* *Biomolecules*. **2021**, *11* (2), 271.

1,6-Epi-Cyclophellitol Cyclosulfamidate Is a Bona Fide Lysosomal α -Glucosidase Stabilizer for the Treatment of Pompe Disease.

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Males, A.[‡]; Kok, K.[‡]; Nin-Hill, A.; de Koster, N.; van den Beukel, S.; Beenakker, T. J. M.; van der Marel, G. A.; Codée, J. D. C.; Aerts, J. M. F. G.; Overkleeft, H. S.; Rovira, C.*; Davies, G. J.*; Artola, M.* *Chem. Sci.* **2023**, *14* (46), 13581–13586.

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Epi-cyclophellitol cyclosulfate, a mechanism-based ER α -glucosidase II inhibitor, blocks replication of SARS-CoV-2 and other coronaviruses.

Thaler, M.[‡]; Ofman, T. P.[‡]; Kok, K.; Heming, J. J. A.; Moran, E.; Leijts, A.A.; van den Nieuwendijk, A. M. C. H.; van den Berg, R. J. B. H. N.; Ruijgrok, G.; Armstrong, Z.; Salgado-Benvindo, C.; Ninaber, D. K.; Snijder, E. J.; van Boeckel, C. A. A.; Artola, M.; Davies, G. J.; Overkleeft, H. S.*; van Hemert, M. J.* *ACS Cent. Sci.* **2024**, *Accepted*.

[‡]Shared first co-authorship; *corresponding author.

Curriculum Vitae

Ken Kok was born on March 25th 1996 in Soest, the Netherlands. He attended high school at Laar & Berg and graduated in 2014 with a specialization in “Natuur en Techniek”. Afterwards he started his scientific journey by pursuing a bachelor’s degree in bio-pharmaceutical sciences from Leiden University. After his minor in Modern drug discovery he performed his bachelor internship in the Bio-organic synthesis group working on the synthesis of well-defined lipoteichoic acid fragments under the supervision of Dr. Jacopo Enotarpi, Prof. Dr. Jeroen Codée and Prof. Dr. Gijs van der Marel, and he obtained his bachelor’s degree (cum laude) in 2017.

Ken then pursued his academic journey within the Chemistry master’s program at Leiden University with a specialization in Chemical Biology. To finish his chemistry master he performed an one year internship at the Bio-organic synthesis department. During this year he worked on the development of pharmacological chaperones as potential treatment for Pompe and Fabry disease under the supervision of Dr. Marta Artola, Prof. Dr. Hermen Overkleeft and Prof. Dr. Jeroen Codée. In October 2019 he officially obtained his master’s degree (cum laude).

After his master, he continued his academic career under the supervision of Dr. Marta Artola at the Medical Biochemistry group developing novel glycosidase and glycosyltransferase inhibitors which are presented in this thesis. Parts of the research described in this thesis have been communicated via poster presentations at NWO CHAINS 2019 (Velthoven, The Netherlands) and Eurocarb 2024 (Paris, France), and oral communications at NWO CHAINS 2021 (online), the ESMEC summer school 2022 (Urbino, Italy) and Eurocarb 2024 (Paris, France).

During his PhD, Ken received a travel grant to attend the ESMEC summer school in Urbino Italy (2022). In addition, he received a nomination by the KNAW to attend the Lindau Nobel laureate meeting (2022) as well as a nomination from the Leiden Institute of Chemistry (LIC) for the Krijn-Rietveld Doctoral societal impact award (2024).

Ken is planning to continue his academic career as a postdoctoral researcher in the group of Prof. Dr. Phil. S. Baran at the Scripps institute (La Jolla, California, US).