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Exploring the versatility of human β -glucosidases and related glycosylated metabolites with novel chemical tools

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List of publications

Stef Bannink, Kateryna O. Bila, Joosje van Weperen, Nina A. M. Ligthart, Maria J. Ferraz, Rolf G. Boot, Daan van der Vliet, Daphne. E.C. Boer, Herman S. Overkleeft, Marta Artola* and Johannes M. F. G. Aerts* 6-*O*-Alkyl 4-Methylumbelliferyl- β -D-Glucosides as Selective Substrates for GBA1 in the Discovery of Glycosylated Sterols. *J. Lipid Res.* **2024**, 65 (11), 100670.

Curriculum vitae

Stef Bannink was born on May 3, 1994, in Stadskanaal, the Netherlands. He attended high school at Ubbo Emmius in Stadskanaal and graduated in 2012 with specializations in both Nature & Technology (N&T) and Nature & Health (N&G).

He began his scientific career by pursuing a Bachelor's degree in Chemistry at the University of Groningen (Rijksuniversiteit Groningen). In 2016, he obtained his B.Sc. in Chemistry after completing his bachelor's internship in the research group of Prof. dr. Anna Hirsch, under the supervision of Dr. Alwin Hartman. During this project, he worked on generating a set of hydrazines and aldehydes to identify ligands for the 14-3-3 protein.

Following this, Stef entered the Master's program in Chemistry at the University of Groningen, specializing in Chemical Biology. His first research internship was a nine-month project in the organic synthesis group of Prof. dr. Adri Minnaard, supervised by Dr. Ruben Andringa and Dr. Martin Witte. There, he designed and synthesized diazirine-based photoaffinity probes, which were applied to attempt the identification of an unknown enzyme responsible for forming a carbon-carbon bond in the lipid biosynthesis pathway of archaea. For his second internship, Stef joined the research group of Prof. dr. Ed Tate at Imperial College London for five months. He worked on the synthesis of large, bivalent peptide ligands targeting multiple G-protein-coupled receptors (GPCRs) an approach with potential for novel diabetes treatments. Stef completed his Master's degree in July 2019. These research experiences sparked Stef's interest in using organic chemistry to develop chemical tools in order to better understand biological systems.

After obtaining his Master's degree, Stef began a PhD in the Medical Biochemistry group at Leiden University, under the supervision of Prof. dr. Hans Aerts and Dr. Marta Artola. His research focused on the identification of novel glucosylated metabolites by synthesizing and evaluating functionalized fluorogenic substrates to improve the understanding of Gaucher's Disease. The results of this work are presented in his doctoral thesis. During his PhD Stef followed a course on scientific conduct and GMP.

Parts of his PhD research have been presented at various scientific meetings, including poster presentations at the IWGGD 2022, EMBL Metabolomics Course 2022, and Eurocarb 2023 in Paris, as well as an oral presentation at the IWGGD 2022.