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High-throughput quantification and unambiguous identification for metabolomics

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CURRICULUM VITAE

Tom van der Laan was born on February 8 1992 in Amersfoort. In 2010, he obtained his high school (Gymnasium) diploma at Johan van Oldenbarnevelt in Amersfoort. After his graduation, he moved to Leiden to continue his studies at Leiden University. He enrolled for the bachelor Biopharmaceutical Sciences in which he was introduced with analytical chemistry for the first time by Peter Lindenburg and Rawi Ramautar. During his bachelor internship, he developed his first bioanalytical platforms using capillary electrophoresis (CE) and mass spectrometry (MS).

In 2014, Tom started the master Biopharmaceutical Sciences, in which he choose the specialization track 'Analytical Biosciences'. His first internship was supervised by Rawi Ramautar and Rosilene Burgos and focused on correlating ultra-weak photon emission with metabolic changes using CE-MS. This research successfully identified seven metabolites which were inversely correlated with ultra-weak photon emission and resulted in his first publication.

For his second internship, Tom moved to Karlsruhe to work at Agilent Technologies. Under the supervision of Christian Wenz and Peter Lindenburg, he developed a method for a new CE-MS interface in which the dilution factor of the sheath liquid was minimized. The evaluation of the new interface demonstrated promising results with regards to the sensitivity of CE-MS analyses.

In 2016, Tom started as a PhD student in the group of Professor Thomas Hankemeier. Under the supervision of his co-promotors Anne-Charlotte Dubbelman and Amy Harms, he focused on the high-throughput quantification and unambiguous identification of metabolites in complex samples. He developed a fast and on-line fractionation technique, which lead to a patent application and a publication in Analytical Chemistry. In collaboration with Sciex, he evaluated different data independent acquisition techniques. He presented these results in a webinar hosted by the Analytical Scientist. In a joined academic and industrial consortium, he developed an identification platform for metabolites in complex samples. For this project, he collaborated with DSM, Unilever and Wageningen University, which lead to the successful identification of five taste-related metabolites in soy sauce.

After his PhD, Tom is going to work in the Analytical Assay group at Janssen Vaccines in Leiden. As a scientist, he will be responsible for the development of analytical methods for the characterization of new vaccines.

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First of all, I would like to highlight the major role of Peter and Rawi during my university studies. They have introduced me with the beauty of science and inspired me to pursue a scientific career.

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