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## Mass spectrometry-based degradomics analysis of toxoid vaccines

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## List of Publications

Yang, X.; Dong, G.; **Michiels, T. J. M.**; Lenselink, E. B.; Heitman, L.; Louvel, J.; IJzerman, A.P., A Covalent Antagonist for the Human Adenosine A2A Receptor. *Purinergic Signal* **2017**, *13* (2), 191-201.

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*Ben Haïm, C., Depré, D.P.M., Medina, F.D., Michiels, T.J.M.,* Wagschal, S.A., Processes and Intermediates for Preparing a BTK Inhibitor, Applicant: Janssen Pharmaceutica, Patent: WO2018065504

Metz, B.; **Michiels, T.**; Uittenbogaard, J.; Danial, M.; Tilstra, W.; Meiring, H. D.; Hennink, W. E.; Crommelin, D. J. A.; Kersten, G. F. A.; Jiskoot, W., Identification of Formaldehyde-Induced Modifications in Diphtheria Toxin. *J Pharm Sci* **2020**, *109* (1), 543-557.

**Michiels, T. J. M.**; Meiring, H. D.; Jiskoot, W.; Kersten, G. F. A.; Metz, B., Formaldehyde Treatment of Proteins Enhances Proteolytic Degradation by the Endo-Lysosomal Protease Cathepsin S. *Sci Rep* **2020**, *10* (1), 11535.

**Michiels, T. J. M.**; Schoneich, C.; Hamzink, M. R. J.; Meiring, H. D.; Kersten, G. F. A.; Jiskoot, W.; Metz, B., Novel Formaldehyde-Induced Modifications of Lysine Residue Pairs in Peptides and Proteins: Identification and Relevance to Vaccine Development. *Mol Pharm* **2020**, *17* (11), 4375-4385.

**Michiels, T. J. M.**; Tilstra, W.; Hamzink, M. R. J.; de Ridder, J. W.; Danial, M.; Meiring, H. D.; Kersten, G. F. A.; Jiskoot, W.; Metz, B., Degradomics-Based Analysis of Tetanus Toxoids as a Quality Control Assay. *Vaccines (Basel)* **2020**, *8* (4), 712.

**Michiels, T. J. M.**; van Veen, M. A.; Meiring, H. D.; Jiskoot, W.; Kersten, G. F. A.; Metz, B., Common Reference-Based Tandem Mass Tag Multiplexing for the Relative Quantification of Peptides: Design and Application to Degradome Analysis of Diphtheria Toxoid. *J Am Soc Mass Spectrom* **2021**, 32 (6), 1490-1497.

## Curriculum Vitae

Thomas Michiels was born on October 25th, 1991, in Roosendaal, the Netherlands. After graduating high school in 2011, he studied Bio-Pharmaceutical Sciences at Leiden University. After a chemistry-oriented bachelor, he continued with a chemistry-oriented Bio-Pharmaceutical Sciences master. His master's nine-month research project focused on the design and synthesis of covalent adenosine A<sub>2A</sub> receptor antagonists at the Medicinal Chemistry department of the LACDR under the supervision of Dr. Julien Louvel. Subsequently, he conducted his six-month internship at Janssen Pharmaceutica in Beerse, Belgium, under the supervision of Dr. Simon Wagschal. This work focused on optimizing the synthesis of enantiopure precursors for a BTK inhibitor by using ruthenium-catalyzed chemo-enzymatic dynamic kinetic resolution. He obtained his master's degree in 2016 and started his PhD research in November that year, under the supervision of Prof. Dr. Gideon Kersten, Prof. Dr. Wim Jiskoot and Dr. Bernard Metz. The PhD project was a collaboration between the Leiden Academic Centre for Drug Research (LACDR) and the Institute for Translational Vaccinology (Intravacc). He currently works as a scientist at Intravacc in the Product Characterization and Formulation department.



