EUROPEAN MEDICINES AGENCY
SCIENCE MEDICINES HEALTH

Curriculum Vitae

Personal information

Markus Tomek

Work experience

1. Employer: AGES GmbH
   - Start date: 12/21
   - End date: -
   - Position: Assessor for Biologics - Quality
   - Activities:
   - Country: Austria
2. Employer: Universität für Bodenkultur, Wien
   - Start date: 12/20
   - End date: 11/21
   - Position: Postdoctoral Fellowship
   - Activities: Erwin_Schrödinger_Fellowship by the Austrian Science Fund, FWF Project: "Engineering of multivalent proteinglycosylation in E. coli"
   - Country: Austria

3. Employer: ETH Zürich
   - Start date: 10/18
   - End date: 09/20
   - Position: Postdoctoral Fellowship
   - Activities: Erwin_Schrödinger_Fellowship by the Austrian Science Fund, FWF Project: "Engineering of multivalent proteinglycosylation in E. coli" Performed at the Institut of Microbiology at the ETH Zurich under the supervision of Prof. Markus Aebi
   - Country: Switzerland

4. Employer: Universität für Bodenkultur, Wien
   - Start date: 03/17
   - End date: 07/18
   - Position: Postdoctoral Researcher
   - Activities: Glycobiology and immunology of the oral pathogen Tannerella forsythia
   - Country: Austria

5. Employer: Medizinische Universität Wien
   - Start date: 10/08
   - End date: 11/09
   - Position: Laboratory Assistant
   - Activities:
   - Country: Austria

Education and training

1. Subject: Universität für Bodenkultur, Wien
   - Start date: 2012
   - End date: 2017
   - Qualification: PhD
   - Organisation: Project and thesis title: "Glycoprotein biosynthesis and cell surface translocation in the oral pathogen Tannerella forsythia". Performed at the Department of NanoBiotechnology at BOKU under the supervision of Prof. Christina Schäffer and within the PhD program "BioToP _ Biomolecular Technology of Proteins" Research stays at Jagiellonian University, Krakow, Poland (Prof. Jan Potempa) University of Louiville, KY, USA (Prof. Jan Potempa)
   - Country: Austria

2. Subject: Universität für Bodenkultur, Wien
   - Start date: 2009
   - End date: 2011
   - Qualification: Master Degree (Dipl._Ing.)
   - Organisation: Master´s degree in Biotechnology Master Thesis performed at Karolinska Institutet, Stockholm, Sweden Thesis title: "Structural and biochemical studies between the T_cell receptor p14 and MHC class I complexes loaded with the LCMV derived antigen gp33 and The structure and function of the catalytic domain of Streptococcus pneumoniae major autolysin LytA". Research was performed at the Department of Microbiology, Tumor and Cell Biology under the supervision of Prof. Adnane Achour.
   - Country: Austria

3. Subject: Universität für Bodenkultur, Wien
   - Start date: 2004
   - End date: 2009
   - Qualification: Bachelor of Science
   - Organisation: Bachelor of Science in Food_ and Biotechnology Bachelor Thesis performed at Pibulsongram Rajabhat University, Thailand Thesis title: "Lacic acid bacteria found on fermented fish (Plara) in Thailand" Research was performed during a two months research stay in the frame of an AESTE traineeship at the Rajabhat Pibulsongram University, Phitsanulok, Thailand (Faculty

of Food and Agricultural Technology) under the supervision of Dr Khongsak Srikaeo.
- Country: Austria

4. Subject: KTH _ Royal Technical University
- Start date: 2008
- End date: 2008
- Qualification: ERASMUS
- Organisation:
- Country: Sweden

Additional information

Publications

-> https://orcid.org/0000_0003_0492_975X

Bloch S, Hager-Mair FF, Bacher J, Tomek MB, Janesch B, Andrukhov O, Schäffer C. Investigating the role of a *Tannerella forsythia* HtrA protease in host protein degradation and inflammatory response. Front Oral Health. 2024 Jul 5;5:1425937. doi: 10.3389/froh.2024.1425937. PMID: 39035711; PMCID: PMC11257890.

Braun ML, Tomek MB, Grünwald_Gruber C, Nguyen PQ, Bloch S, Potempa JS, Andrukhov O and Schäffer C (2022) Shut_Down of Type IX Protein Secretion Alters the Host Immune Response to Tannerella forsythia and Porphyromonas gingivalis. Front. Cell. Infect. Microbiol. 12:835509. doi: 10.3389/fcimb.2022.835509

Tomek MB, Janesch B, Braun ML, Taschner M, Figl R, Grünwald_Gruber C, Coyne MJ, Blaukopf M, Altmann F, Kosma P, Kählig H, Comstock LE, Schäffer C. A Combination of Structural, Genetic, Phenotypic and Enzymatic Analyses Reveals the Importance of a Predicted Fucosyltransferase to Protein O_Glycosylation in the Bacteroidetes. Biomolecules. 2021; 11(12):1795. https://doi.org/10.3390/biom11121795

Mayer, V.M.T., Tomek, M.B., Figl, R. et al. Utilization of different MurNAc sources by the oral pathogen Tannerella forsythia and role of the inner membrane transporter AmpG. BMC Microbiol 20, 352 (2020). https://doi.org/10.1186/s12866_020_02006_z

Tytgat, H.L.P., Lin, Cw., Levasseur, M.D. et al. Cytoplasmic glycoengineering enables biosynthesis of nanoscale glycoprotein assemblies. Nat Commun 10, 5403 (2019). https://doi.org/10.1038/s41467_019_13283_2

Bloch S, Tomek MB, Friedrich V, Messner P, Schaeffer C. 2019 Nonulosonic acids contribute to the pathogenicity of the oral bacterium Tannerella forsythia.Interface Focus 9: 20180064.http://dx.doi.org/10.1098/rsfs.2018.0064

Tomek MB, Maresch D, Windwarder M, Friedrich V, Janesch B, Fuchs K, Neumann L, Nimeth I, Zwickl NF, Dohm JC, Everest_Dass A, Kolarich D, Himmelbauer H, Altmann F and Schäffer C (2018) A General Protein O_Glycosylation Gene Cluster Encodes the Species_Specific Glycan of the Oral Pathogen Tannerella forsythia: O_Glycan Biosynthesis and Immunological Implications. Front. Microbiol. 9:2008. doi: 10.3389/fmicb.2018.02008

Hottmann I, Mayer VMT, Tomek MB, Friedrich V, Calvert MB, Titz A, Schäffer C and Mayer C (2018) N_Acetylmuramic Acid (MurNAc) Auxotrophy of the Oral Pathogen Tannerella forsythia: Characterization of a MurNAc Kinase and Analysis of Its Role in Cell Wall Metabolism. Front. Microbiol. 9:19. doi: 10.3389/fmicb.2018.00019

Markus B Tomek, Bettina Janesch, Daniel Maresch, Markus Windwarder, Friedrich Altmann, Paul Messner, Christina Schäffer, A pseudaminic acid or a legionaminic acid derivative transferase is strain_specifically implicated in the general protein O_glycosylation system of the periodontal pathogen Tannerella forsythia, Glycobiology, Volume 27, Issue 6, June 2017, Pages 555–567, https://doi.org/10.1093/glycob/cwx019

Tomek, M., Neumann, L., Nimeth, I., Koerdt, A., Andesner, P., Messner, P., Mach, L., Potempa, J. and Schäffer, C. (2014), The S_layer proteins of Tannerella forsythia are secreted via a type IX secretion system that is decoupled from protein O_glycosylation. Mol oral Microbiol, 29: 307_320. https://doi.org/10.1111/omi.12062

Allerbring EB, Duru AD, Uchtenhagen H, Madhurantakam C, Tomek MB, Grimm S, et al. Unexpected T_cell recognition of an altered peptide ligand is driven by reversed thermodynamics. European journal of immunology. 2012;42(11):2990–3000. pmid:22837158.

Projects

Engineering multivalent protein glycosylation in E. coli Erwin Schrödinger Fellowship of the Austrian Science Fund FWF; https://pf.fwf.ac.at/en/research_in_practice/project_finder/44265

Memberships

Memberships

ÖGMBT _ Austrian Association of Molecular Life Sciences and Biotechnology

IAESTE Austria Alumni

Editorial Roles

Review Editor for Frontiers in Oral Health

Other Relevant Information

Awards

Poster Prize - Issued by FASEB Science Research Conference on Microbial Glycobiology; West Palm Beach, FL, USA; Jan 2016

Austrian Young Glycoscientist Best Talk Award - Issued by 6th Annual ÖGMBT Meeting, Vienna, Austria; Jan 2014