

PERSONAL INFORMATION

Name JOSHUA TOBIAS
Acad. Degree: PhD
Current Position: Senior scientist
Contact details: Institute of Specific Prophylaxis and Tropical Medicine,
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SCIENTIFIC HISTORY

01/2004-12/2007 Postdoc, Department of Microbiology and Immunology, University of Gothenburg, Sweden
01/2008-06/2015 Scientist, Department of Microbiology and Immunology, University of Gothenburg, Sweden
07/2015-12/2022 Senior scientist, Medical University of Vienna, Vienna, Austria
Since 01/2023 Permanent senior scientist, Medical University of Vienna, Vienna, Austria

ACADEMIC EDUCATION

10/1991-09/1995 Bachelor of Science in Biology, Tel Aviv University, Israel
10/1995-09/1998 Master of Science in Microbiology, School of Medicine, Tel Aviv University, Israel
10/1998-12/2003 PhD in Microbiology and Molecular Biology, School of Medicine, Tel Aviv University, Israel

MAIN AREAS OF RESEARCH

- Construction, development and formulation of protein-based vaccines against infectious diseases
- Immunotherapy, and construction, development, and formulation of B cell peptide-based vaccines against protein-based vaccines against cancer and infectious diseases
- Construction of intranasal vaccines based on probiotic bacteria

PROFESSIONAL AWARDS AND HONOURS

- Patent: A method of producing a vaccine composition and uses thereof. WO 2019/153042 A1
- Patent: Vaccine for protection against ETEC-induced diarrhea comprising dmLT. US 2015/0320850 A1
- Patent: Method for increasing ETEC CS6 antigen presentation on cell surface and products obtainable thereof. WO 2013/037718 A1

- Patent: Hybrid operon for expression of colonization factor (CF) antigens of enterotoxigenic *E. coli*. WO 2009/004002 A1

KEY PUBLICATIONS

- Tobias J, Drinić M, Schmid A, Hladik A, Battin C, Watzenböck M, Garner-Spitzer E, Steinberger P, Kundi M, Knapp S, Zielinski CC, Wiedermann U. Combined Vaccination with B Cell Peptides Targeting Her-2/neu and Immune Checkpoints as Emerging Treatment Option in Cancer. *Cancers*, 2022, 14:5678. doi: 10.3390/cancers14225678.
- Ede NJ, Good AJ, Tobias J, Garner-Spitzer E, Zielinski CC, Wiedermann U. Development of the B Cell Cancer Vaccine HER-Vaxx for the Treatment of Her-2 Expressing Cancers. *Front. Oncol*, 2022, ;12:939356. doi: 10.3389/fonc.2022.939356.
- Battin C, Kaufmann G, Leitner J, Tobias J, Wiedermann U, Rölle A, Meyer M, Momburg F, Steinberger P. NKG2A-mediated inhibition and its blockade critically depends on peptides presented by its ligand HLA-E. *Immunology*, 2022, 166:507-521. doi: 10.1111/imm.13515.
- Tobias J, Drinić M, Högl S, Ambroz K, Baier K, Kodajova P, Tomasich E, Berghoff AS, Schmid A, Garner-Spitzer E, Kenner L, Kundi M, Zieleinski CC, Wiedermann U. Active Immunization with a Her-2/neu-Targeting Multi-peptide B Cell Vaccine Prevents Lung Metastases Formation from Her-2/neu Breast Cancer in a Mouse Model. *Trans. Oncol.* 2022, 19:101378. doi: 10.1016/j.tranon.2022.101378.
- Tobias J, Garner-Spitzer E, Drinić M, Wiedermann U. Vaccination against Her-2/neu, with focus on peptide-based vaccines. *ESMO Open*. 2022, 7:100361. doi: 10.1016/j.esmoop.2021.100361.
- Tobias J, Steinberger P, Drinić M, Wiedermann U. Emerging targets for anticancer vaccination: PD-1. *ESMO Open*, 2021, 6:100278. doi: 10.1016/j.esmoop.2021.100278.
- Wiedermann U, Garner-Spitzer E, Chao Y, Maglakelidze M, Bulat I, Dechaphunkul A, Arpornwirat W, Charoentum C, Yen C-J, Yau TC, Tanasanvimon S, Maneechavakajorn J, Sookprasert A, Bai L-Y, Chou W-C, Ungtrakul T, Drinic M, Tobias J, Zielinski CC, Chong L, Ede NJ, Marino MT, Good AJ. Clinical and immunologic responses to a B-cell epitope vaccine in HER2/neu overexpressing advanced gastric cancer patients – results from Phase 1b trial IMU.ACS.001. *Clin. Cancer Res.* 2021, 27:3649. doi: 10.1158/1078-0432.CCR-20-3742.
- Tobias J, Battin C, De Sousa Linhares A, Lebens M, Baier K, Ambroz K, Drinić M, Högl S, Inic-Kanada A, Garner-Spitzer E, Preusser M, Kenner L, Kundi M, Zielinski CC, Steinberger P, Wiedermann U. A new strategy towards B cell-based cancer vaccines by active immunization with mimotopes of immune checkpoint inhibitors. *Front. Immunol.* 2020, 11:895. doi: 10.3389/fimmu.2020.00895.
- De Sousa Linhares A., Battin C., Jutz S., Leitner J., Hafner C., Tobias J, Wiedermann U., Kundi M., Zlabinger GJ, Grabmeier-Pfistershammer K., Steinberger P. Therapeutic PD-L1 antibodies are more effective than PD-1 antibodies in blocking PD-1/PD-L1 signaling. *Sci. Rep.* 2019, 9:11472. doi: 10.1038/s41598-019-47910-1.
- Tobias J, Jasinska J, Baier K, Kundi M, Ede N, Zielinski C, Wiedermann U. Enhanced and long term immunogenicity of a Her-2/neu multi-epitope vaccine conjugated to the carrier CRM197 in conjunction with the adjuvant Montanide. *BMC Cancer*. 2017, 17:118. doi: 10.1186/s12885-017-3098-7.
- Tobias J, Lebens M, Wai SN, Holmgren J, Svennerholm AM. Surface expression of *Helicobacter pylori* Borde A, Ekman A, Larsson A, Carlin N, Holmgren J, Tobias J. Preparation and preclinical evaluation of a freeze-dried formulation of a novel combined multivalent whole-cell/B-subunit oral vaccine against enterotoxigenic *Escherichia coli* diarrhea. *Eur J Pharm Biopharm.* 2016, 108:18-24. doi: 10.1016/j.ejpb.2016.07.011.

- Lundgren A, Leach S, Tobias J, Carlin N, Gustafsson B, Jertborn M, Kaim J, Wiklund G, Adamsson J, Eklund L, Bourgeois L, Walker R, Holmgren J, Svennerholm A-M. Clinical trial to evaluate safety and immunogenicity of an oral inactivated enterotoxigenic *Escherichia coli* vaccine containing CFA/I overexpressing bacteria and recombinantly produced LTB/CTB hybrid protein. *Vaccine*. 2013, 31:1163-1170. doi: 10.1016/j.vaccine.2012.12.063.
- Tobias J, Svennerholm A-M. Strategies to over-express enterotoxigenic *Escherichia coli* (ETEC) colonization factors for construction of oral whole-cell inactivated ETEC vaccine candidates. *Appl. Microbiol. Biotechnol.* 2012, 93:2291-2300. doi: 10.1007/s00253-012-3930-6.
- Tobias J, Svennerholm A-M, Carlin NIA, Lebens M, Holmgren J. Construction of a nontoxicogenic *Escherichia coli* oral vaccine strain expressing high amounts of CS6 and inducing strong intestinal and serum anti-CS6 antibody responses in mice. *Vaccine*. 2011, 29:8863-8869. doi: 10.1016/j.vaccine.2011.09.096.