

Recent Top 10 (main focus: host factors and microbial carcinogenesis)

1. Karlas, A., N. Machuy, Y. Shin, K.P. Pleissner, A. Artarini, D. Heuer, D. Becker, H. Khalil, L.A. Ogilvie, S. Hess, A.P. Mäurer, E. Müller, T. Wolff, T. Rudel, and T.F. Meyer (2010). Genome-wide RNAi screen identifies human host factors crucial for influenza virus replication. *Nature* 463, 818-822.

*One of the first comprehensive studies revealing host factors essential for influenza virus replication and providing a basis for options of host-directed antiviral therapy.*

2. Chumduri, C., R.K. Gurumurthy, P.K. Zadora, Y. Mi, and T.F. Meyer (2013). Chlamydia infection promotes host DNA damage and proliferation but impairs the DNA damage response. *Cell Host Microbe* 13, 746-758.

*First study revealing host cell DNA damage and modulation of the DNA damage response upon infection with the intracellular pathogen Chlamydia trachomatis.*

3. Gonzalez, E., M. Rother, M.C. Kerr, M.A. Al-Zeer, M. Abu-Lubad, M. Kessler, V. Brinkmann, A. Loewer, and T.F. Meyer (2014) Chlamydia infection depends on a functional MDM2-p53 axis. *Nature Commun* 5: 5201

*Demonstration of a key regulatory feature of Chlamydia trachomatis on host cell function, providing clues to the pathogen's anti-apoptotic features with implications for host metabolism and genome stability.*

4. Koepfel, M., F. Garcia-Alcalde, F. Glowinski, P. Schlaermann, and T.F. Meyer (2015) Helicobacter pylori Infection Causes Characteristic DNA Damage Patterns in Human Cells. *Cell Rep.*;11:1703-13.

*A genome-wide analysis of DNA damage induced upon infection by Helicobacter pylori revealing patterns of mutational similarity with gastric cancer genomes.*

5. Kessler, M., K. Hoffmann, V. Brinkmann, O. Thieck, S. Jackisch, B. Toelle, H. Berger, H.J. Mollenkopf, M. Mangler, J. Sehoul, C. Fotopoulou, and T.F. Meyer (2015). The Notch and Wnt pathways regulate stemness and differentiation in human fallopian tube organoids. *Nat Commun* 6: 8989.

*First successful establishment of an organoid model from the female genital tract epithelium and elucidation of key differentiation processes – as a basis for future infection and cell transformation studies.*

6. Sigal, M., C.Y. Logan, M. Kapalczynska, H.J. Mollenkopf, H. Berger, B. Wiedenmann, R. Nusse, M.R. Amieva, and T.F. Meyer (2017). Stromal R-spondin orchestrates gastric epithelial stem cells and gland homeostasis. *Nature* 548: 451-455.

*One of the first insightful studies placing gastric infections by Helicobacter pylori in the context of tissue homeostasis and stem cell function.*

7. Zimmermann, S., L. Pfannkuch, M.A. Al-Zeer, S. Bartfeld, M. Koch, J. Liu, C. Rechner, M. Soerensen, O. Sokolova, A. Zamyatina, P. Kosma, A.P. Mäurer, F. Glowinski, K.P. Pleissner, M. Schmid, V. Brinkmann, A. Karlas, M. Naumann, M. Rother, N. Machuy, and T.F. Meyer. (2017). ALPK1- and TIFA-Dependent

Innate Immune Response Triggered by the *Helicobacter pylori* Type IV Secretion System. *Cell Rep* 20: 2384-2395.

*Identification and characterisation of a novel pattern recognition pathway involving Alpk1 and TIFA, explaining the pro-inflammatory features of highly pathogenic traits of Helicobacter pylori.*

8. Morey, P., L. Pfannkuch, E. Pang, F. Boccellato, M. Sigal, A. Imai-Matsushima, V. Dyer, M. Koch, H.J. Mollenkopf, P. Schlaermann, and T.F. Meyer (2017). *Helicobacter pylori* Depletes Cholesterol in Gastric Glands to Prevent Interferon gamma Signaling and Escape the Inflammatory Response. *Gastroenterology* doi: 10.1053/j.gastro.2017.12.008

*One of the most striking explanations of a pathogenic bacterial persistence mechanism, based on host cell cholesterol acquisition and concomitant inactivation of JAK/STAT-dependent host epithelial defence mechanisms.*

9. Boccellato, F., S. Woelffling, A. Imai-Matsushima, G. Sanchez, C. Goosmann, M. Schmid, H. Berger, P. Morey, C. Denecke, J. Ordemann, and T.F. Meyer (2018). Polarised epithelial monolayers of the gastric mucosa reveal insights into mucosal homeostasis and defence against infection. *Gut*. doi: 10.1136/gutjnl-2017-314540

*An exciting example for the recent advancement of human primary tissue culture models suitable for the assessment of long-term infection processes, as well as investigations of mucosal defense and epithelial transformation processes.*

10. Rother, M., E. Gonzalez, A.R. Teixeira da Costa, L. Wask, I. Gravenstein, M. Pardo, M. Pietzke, R.K. Gurumurthy, J. Angermann, R. Laudeley, S. Glage, M. Meyer, C. Chumduri, S. Kempa, K. Dinkel, A. Unger, B. Klebl, A. Klos, and T.F. Meyer (2018) Combined Human Genome-wide RNAi and Metabolite Analyses Identify IMPDH as a Host-Directed Target against Chlamydia Infection. *Cell Host Microbe* 23: 661-671 e8

*One of the most comprehensive analyses of host cell factor involvement in intracellular bacterial pathogen replication, including identification and preclinical testing of a suitable target for host-directed therapy.*