

Dr. Munir Al-Zeer
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Department of Biological Sciences
University of Jordan
Amman, Jordan

Education

- 2006-2009 **PhD in Molecular Biology (Infection Biology)**
Humboldt University of Berlin, Germany
- 2002-2004 **Master's degree in Biological Sciences**
University of Jordan
- 1998-2002 **Bachelor's degree in Biological Sciences**
University of Jordan

Research and Teaching Experience

- 2017-2022 **Team leader and Lecturer**
"3D organ models to study cancer, immunity, and infectious diseases"
Institute for Biotechnology
Department of Applied Biochemistry
Technical University of Berlin, Germany
- 2014-2017 **Senior Postdoc**
"Epithelial immunity against Chlamydia and Helicobacter"
Department of Molecular Biology
Max Planck Institute for Infection Biology, Germany
- 2009-2014 **Postdoc**
"Host-pathogen interactions"

Department of Molecular Biology
Max Planck Institute for Infection Biology, Germany

Student Supervision

2010-2011	Daniel Lauster	University of Stuttgart	Master Student
2010-2013	Mohammad Abu Lubad	Humboldt University of Berlin	PhD Student
2017-2019	Janine Sigulla	Max Planck Institute for Infection Biology	PhD Student
2017-2019	Audrey Xavier	Max Delbrück Center for Molecular Medicine	PhD Student
2016-2017	Stephanie Zimmermann	Free University of Berlin	PhD Student
2019	Sebastian Schlüter	Technical University of Berlin	Bachelor Student
2019	Konrad Schmidt	Technical University of Berlin	Bachelor Student
2020	Alexandra Bettinelli	Technical University of Berlin	Master Student
2020	Estelle Prüstke	Technical University of Berlin	Bachelor Student
2022	Konrad Schmidt	Technical University of Berlin	Master Student

Fellowship

2009-2015	Postdoc fellowship funded by Max Planck Society
2007-2009	German Academic Exchange Service (DAAD) fellowship, PhD
2006-2007	PhD research fellowship in Molecular Biology funded by Max Planck Society.

Management Experience

2018-Present	Gene technology project leader, Technical University of Berlin, Germany
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Courses

2007	Handling mice: procedures and treatments, Max Planck Institute for Infection Biology, Berlin, Germany
2018	Gene technology project leader, Issuing Authority Office for Health and Social Affairs Berlin (LAGESO)

Ad hoc reviewer

F1000, Frontiers in Cellular and Infection Biology, PLOS ONE, Nature.

Guest Associate Editor

Journal: Frontiers Molecular Biosciences

Topic: Molecular Diagnostics and Therapeutics

Sub-Topic: Small Molecules and Peptides-Based Candidates as Therapeutics and Vaccines for COVID-19 Pandemics

Grant application

2021: Title: "Bio-printing of a 3D lung cancer model".

Principal Investigators: Munir A. Al-Zeer, Johanna Berg, and Jens Kurreck.
Technical University of Berlin

The SET Foundation: (30,000 Euros).

2016: Title: "Epigenetic modulation of the host cell environment during chronic Chlamydia infections".

Principal Investigators: Thomas F. Meyer and Munir A. Al-Zeer

Max Planck Institute for Infection Biology
Max Planck Society: 200,000 Euros.

Patent

Title: Method for the preparation of an influenza virus [WO 2011/029914 A1](#)

Applicants: Max Planck Gesellschaft, Machuy Nikolaus, Khalil Hany Hamed, **Al-Zeer Munir**, Mollenkopf Hans-Joachim, Patzel Volker, Karlas Alexander, Meyer Thomas.

Languages

- English/Arabic: Native/bilingual.
- German: Fluent

Publications Summary

Number of Publications: 30

Research Gate Score: 28.58

Google Scholar: citations 10216

Hi10-index: 22

Publications

1. MA Abu-Lubad, W Al-Zereini, **Al-Zeer MA**, (2023). Deregulation of the cyclin-dependent kinase inhibitor p27 as a putative candidate for transformation in Chlamydia trachomatis infected mesenchymal stem cells. **AIMS microbiology** 9 (1), 131
2. **Al-Zeer MA**, Prehn, Fiedler, Lienert, Krisch, Berg, Kurreck, Hildebrandt, Schültke (2022). Evaluating the Suitability of 3D Bioprinted Samples for Experimental Radiotherapy: A Pilot Study. **International Journal of Molecular Sciences**. <https://doi.org/10.3390/ijms23179951>
3. **Al-Zeer, MA.**, (2022). (editorial) Emerging of Three-Dimensional Models To Study Human Diseases. **Al-Quds Journal for Academic Research**. <https://doi.org/10.47874/2022:PP6-7>
4. Rabie, A., Ali, AS., **Al-Zeer, MA.**, Barhoum, A., EL-Hallouty, S., Shousha, W., Berg, J., Kurreck, J., Khalil, AS.G. (2022). Spontaneous Formation of 3D-Breast Cancer Tissue on Electrospun Chitosan/Poly (ethylene Oxide) Nanofibrous Scaffolds. **The American Chemical Society Omega**. <https://doi.org/10.1021/acsomega.1c05646>
5. Wu, D., Berg, J., Arlt, B., Röhrs V., **Al-Zeer MA.**, Deubzer H., and Kurreck, J. (2022). Bioprinted Cancer Model of Neuroblastoma in a Renal Microenvironment as an Efficiently Applicable Drug Testing Platform. **International Journal of Molecular Sciences**. <https://doi.org/10.3390/ijms23010122>
6. Hamarsheh, O., Amro, A., **Al-Zeer, MA.** (2021). In Vitro Antibacterial Activity of Selected Palestinian Medicinal Plants against Chlamydia trachomatis. **Microbiology Research**. <https://doi.org/10.3390/microbiolres12030047>
7. Bezbaruah, R., Borah, P., Kakoti, B., Al-Shar'I, N., Chandrasekaran, B., Jaradat, D., **Al-Zeer, MA.**, and Abu-Romman, S. (2021). Developmental landscape of potential vaccine candidates based

Publications

- on viral vector for prophylaxis of COVID-19. **Frontiers in Molecular Biosciences**. Doi: [10.3389/fmolb.2021.635337](https://doi.org/10.3389/fmolb.2021.635337)
8. Schmidt, K., Berg, J., Röhrs, V., Kurreck, J., and **Al-Zeer MA**. (2020). 3D-bioprinted HepaRG cultures as a model for testing long term aflatoxin B1 toxicity in vitro. **Toxicology Reports**. DOI: [10.1016/j.toxrep.2020.11.003](https://doi.org/10.1016/j.toxrep.2020.11.003)
 9. Xavier A, **Al-Zeer MA**, Meyer TF, Daumke O (2020). hGBP1 Coordinates Chlamydia Restriction and Inflammasome Activation through Sequential GTP Hydrolysis. **Cell Reports** doi: [10.1016/j.celrep.2020.107667](https://doi.org/10.1016/j.celrep.2020.107667)
 10. Martínez-Ruiz EB, Cooper M, **Al-Zeer MA**, Kurreck J, Adrian L, Szewzyk U. (2020). Manganese-oxidizing bacteria form multiple cylindrospermopsin transformation products with reduced human liver cell toxicity. **Science of the Total Environment** doi: [10.1016/j.scitotenv.2020.138924](https://doi.org/10.1016/j.scitotenv.2020.138924).
 11. Brüggemann, H., and **Al-Zeer MA.**, (2020). Bacterial signatures and their inflammatory potentials associated with prostate cancer. **Journal of Pathology Microbiology and Immunology** DOI [10.1111/apm.13021](https://doi.org/10.1111/apm.13021)
 12. **Al-Zeer MA**, Mariola Dutkiewicz, Annkathrin von Hacht, Denise Kreuzmann, Viola Röhrs, & Jens Kurreck (2019). Alternatively spliced variants of the 5'-UTR of the ARPC2 mRNA regulate translation by an internal ribosome entry site (IRES) harboring a guanine-quadruplex motif. **RNA Biology**. <https://doi.org/10.1080/15476286.2019.1652524>.
 13. Brüggemann, H., Poehlein, A., Brzuszkiewicz, E., Scavenius, C., Enghild, J., **Al-Zeer MA.**, Brinkmann, V., Jensen, A., Söderquist, B. (2019). Staphylococcus saccharolyticus isolated from blood cultures and prosthetic joint infections exhibits excessive genome decay. **Frontiers in Microbiology**. DOI: [10.3389/fmicb.2019.00478](https://doi.org/10.3389/fmicb.2019.00478).
 14. **Al-Zeer MA.**, Jens Kurreck (2018). Deciphering the Enigmatic Biological Functions of RNA Guanine-Quadruplex Motifs in Higher Eukaryotes. **Biochemistry**, doi: [10.1021/acs.biochem.8b00904](https://doi.org/10.1021/acs.biochem.8b00904).
 15. Hiller T., Berg J., Elomaa L., Röhrs V., Ullah I., Schaar K., Dietrich AK., **Al-Zeer MA.**, Kurtz A., Hocke AC., Hippenstiel S., Fechner H., Weinhart M., Jens Kurreck (2018). Generation of a 3D liver model comprising human extracellular matrix in an alginate-gelatin-based bioink by extrusion bioprinting for infection and transduction studies. **The International Journal of Molecular Sciences**, 12;19(10). pii: E3129. doi: [10.3390/ijms19103129](https://doi.org/10.3390/ijms19103129).
 16. Abu-Lubad M, Alzoubi H, Jarajreh D, Sawalqa AA, Bruggemann H, Albataineh E, Aqel A, **Al-Zeer MA**. (2018). Analysis of *Helicobacter pylori* Genotypes Amongst Jordanians' Dental Plaque Samples. **Gastroenterology Research**. 11(1):46-51. doi: [10.14740/gr947w](https://doi.org/10.14740/gr947w).
 17. Brüggemann H, Jensen A, Nazipi S, Aslan H, Meyer RL, Poehlein A, Brzuszkiewicz E, **Al-Zeer MA**, Brinkmann V, Söderquist B. (2018). Pan-genome analysis of the genus *Fingoldia* identifies two distinct clades, strain-specific heterogeneity, and putative virulence factors. **Scientific Reports**. 266. doi: [10.1038/s41598-017-18661-8](https://doi.org/10.1038/s41598-017-18661-8).

Publications

18. Davidsson, S., Carlsson, J., Mölling, P., Gashi, N., Andren, A., Andersson, S, Brzuszkiewicz, E., Poehlein, A., **Al-Zeer, MA.**, Brinkmann, V., Scavinuis, C., Nazipi, S., Söderquist, B., and Brüggemann, H. (2017). Prevalence of Flp Pili-Encoding Plasmids in Cutibacterium acnes Isolates Obtained from Prostatic Tissue. **Frontiers in Microbiology**. <https://doi.org/10.3389/fmicb.2017.02241>.
19. Zimmermann S*, Pfannkuch L*, **Al-Zeer MA.***, Bartfeld S*, Koch, Liu J., Rechner C., Soerensen M., Sokolova, Zamyatina A., Kosma P., Maeurer A., Glowinski F., Pleissner, Schmid, Brinkmann V., Naumann, Rother, Machuy, Meyer TF., (2017). ALPK1 And TIFA Dependent Innate Immune Response Triggered By The *Helicobacter Pylori* Type IV Secretion System. **Cell Reports**. DOI: [10.1016/j.celrep.2017.08.039](https://doi.org/10.1016/j.celrep.2017.08.039). (*contributed equally, First Authors).
20. **Al-Zeer MA**, Xavier A., Abu lubad M., Sigulla, J., Kessler M., Hurwitz, R., Meyer TF, (2017). Chlamydial activation of PDPK1-Myc prevents apoptosis by enhancing mitochondrial binding of hexokinase II. **EBioMedicine-by the Lancet**. DOI: [10.1016/j.ebiom.2017.08.005](https://doi.org/10.1016/j.ebiom.2017.08.005)
21. Mohammad Abu-Lubad¹, Hamed Alzoubi¹, Dua'a Jarajreh¹, Alaa Al Sawalqa and **Munir A. Al-Zeer**, (2017). Molecular Epidemiology of *Helicobacter pylori* in Dental Plaque among Jordanians; A Probable Source for Infection and Treatment Failure. **Journal of Pure and Applied Microbiology** [dx.doi.org/10.22207/JPAM.11.1.02](https://doi.org/10.22207/JPAM.11.1.02).
22. Sayanjali, Christensen, **Al-Zeer MA**, Mollenkopf, Meyer and Brüggemann (2016). *Propionibacterium acnes* inhibits FOXM1 and induces cell cycle alterations in human primary prostate cells. **International Journal of Medical Microbiology** S1438-4221(16)30073. doi: [10.1016/j.ijmm.2016.06.006](https://doi.org/10.1016/j.ijmm.2016.06.006)
23. **Al-Zeer MA**. Al-Younes, HM, Kerr, M., Abu-Lubad M., Meyer TF. (2014) Chlamydia trachomatis remodels stable microtubules for secure positioning of Golgi stacks at the chlamydial inclusion surface. **Molecular Microbiology** 94(6):1285-97. doi: [10.1111/mmi.12829](https://doi.org/10.1111/mmi.12829).

Research Highlight in Brief in **Nature Reviews Microbiology** ([doi:10.1038/nrmicro3397](https://doi.org/10.1038/nrmicro3397)).
24. González E.*, Rother M.*, Kerr MC.*, **Al-Zeer MA.**, AbuLubad M., Kessler M., Brinkmann V.1, Loewer A., Meyer T. F. (2014) Chlamydia infection depends on a functional MDM2-p53 axis. **Nature Communications** 13;5: 5201. doi: [10.1038/ncomms6201](https://doi.org/10.1038/ncomms6201).

Research Highlight in Brief in **Nature Reviews Microbiology** ([doi:10.1038/nrmicro3406](https://doi.org/10.1038/nrmicro3406)).
25. AbuLubad M., Meyer TF, **Al-Zeer MA*** (2014). Chlamydia inhibits iNOS in Human Mesenchymal Stem Cells by Stimulating Polyamine Synthesis. **The Journal of Immunology**. 193 (6):2941-51. doi: [10.4049/jimmunol.1400377](https://doi.org/10.4049/jimmunol.1400377).
26. **Al-Zeer MA**, Al-Younes, Lauster, Abu Lubad and Meyer TF (2013). Autophagy restricts *Chlamydia trachomatis* growth in human macrophages via IFN γ -inducible guanylate binding proteins. **Autophagy**, 1; 9 (1):50-62. doi: [10.4161/auto.22482](https://doi.org/10.4161/auto.22482).

27. Al-Younes HM, **Al-Zeer MA**, Khalil, H. Gussmann J, , Karlas M, Machuy N, Brinkmann V, Braun P and Meyer TF (2011). Autophagy-independent function of MAP-LC3 during intracellular propagation of *Chlamydia trachomatis* **Autophagy**; 7(8):814-28. [doi: 10.4161/autophagy.7.8.15597](https://doi.org/10.4161/autophagy.7.8.15597).
28. **Al-Zeer MA**, Al-Younes HM, Braun PR, Zerrahn J, Meyer TF (2009). IFN- γ -Inducible Irga6 Mediates Host Resistance against *Chlamydia trachomatis* via Autophagy. **PLOS ONE**, 4(2):e4588. [doi: 10.1371/journal.pone.0004588](https://doi.org/10.1371/journal.pone.0004588).
29. **Al-Zeer M.**, and Masoud, H (2007). LPS-based conjugate vaccines composed of O-polysaccharide from *Pseudomonas aeruginosa* IATS 6 and 11 bound to a carrier protein. **World Journal of Microbiology and Biotechnology**. 23: 1541-1549. doi.org/10.1007/s11274-007-9399-2
30. Daniel J. Klionsky, Fabio C. Abdalla, Hagai Abeliovich, Robert T. Abraham,**Munir A. Al-Zeer**, et al., (2012). Guidelines for the Use and Interpretation of Assays for Monitoring Autophagy. **Autophagy**, 8 (4): 1-100. **Review**. [doi: 10.4161/autophagy.19496](https://doi.org/10.4161/autophagy.19496).
31. **Al-Zeer MA.**, IFN γ -Inducible GTPases Mediate Host Resistance Against *Chlamydia trachomatis* via Autophagy. mbv, Mensch-&-Buch-Verlag. 2010. **Book**

Abstracts and conference presentations

1. STRAHLENTHERAPIE UND ONKOLOGIE 196 (SUPPL 1), S194-S195 (2021). Samples produced using the 3D Printing Process as Test Models for the Microbeam Research. F Prehn, M Al-Zeer, S Fiedler, U Lienert, M Krisch, J Berg, R Elsner
2. 27. Jahrestagung der Deutschen Gesellschaft für Radioonkologie DEGRO 2021 (24-26 June 2021). Entwicklung eines Modells für die experimentelle Radiotherapie aus primären Hirntumorzellen im 3D Bioprint-Verfahren (#437) (2021) Prehn, M. Al-Zeer, G. Hildebrandt, E. Schültke
3. 19th Annual Congress EUSAAT European Congress on Alternatives to Animal Testing. 10-13 October 2019, Linz-Austria. Bioprinting of 3D Organ Models for Virus and Cancer Research
4. 3D Cell Culture 2018: DECHEMA. 05-07 June 2018, Freiburg Germany. 3D Bioprinting of hydrogels for viral Infection and transduction with viral gene vectors
5. EUSAAT European Congress on Alternatives to Animal Testing. 23-26 September 2018, Linz-Austria. 3D Epithelial Culture Model to Study Chlamydia Infection.
6. BB3R: 3D Bioprinting of Organ Models. 09-13 April 2018, Berlin-Germany. 3D cell culture models for infection studies.
7. European Helicobacter and Microbiota Study Group – EHMSG XXXth International Workshop on Helicobacter & Microbiota in Inflammation & Cancer. 7-9 September 2017, Bordeaux-France. ALPK1 and TIFA dependent innate immune response triggered by the Helicobacter pylori type IV secretion system.
8. Type IV Secretion in Gram-Negative and Gram-Positive Bacteria 8-11 December 2016 • Beilngries, Germany. Role of host kinases in innate immune response triggered by the Helicobacter pylori type IV secretion system.
9. EMBL Conference Hematopoietic Stem Cells: From the Embryo to the Aging Organism. 03 - 05 June 2016, Heidelberg- Germany.
10. The Bone marrow Symposium for Fritz Melcher, 27 April, 2016. Berlin Germany.

11. 10th Annual EIMID Meeting (October, 2th – 4th 2013) France. Chlamydia trachomatis co-opts the function of stable microtubules and Golgi ministacks to support intracellular chlamydial growth.
12. 11th German Chlamydia Workshop, Würzburg, Germany. April 10-12, 2013. Chlamydia trachomatis remodels microtubules for secure positioning of Golgi stacks at the chlamydial inclusion)
13. Death, Danger, Inflammation and Immunity, May 31- June 1, 2012. Institute Pasteur Paris, France.
14. Stem Cells in Development and Diseases, September 11-14, 2011. MDC Berlin, Germany.
15. Epigenetics and Stem Cells Conference. August 25-27, 2010 - Copenhagen, Denmark.
16. Fourth European congress of virology, Villa Erba Congress center-Cornobbio, Lake Como, Italy. April 7-11, 2010 (IFN- β modulation of the host autophagy as a novel antiviral strategy).
17. The third SIROCCO meeting (Silencing RNAs: Organizers and Coordinators of Complexity in eukaryotic Organisms). Wellcome Trust Conference Centre in Hinxton UK, November 16- 18, 2009 (Influenza A virus induces endogenous miR-141 to undermine MxA antiviral activity).
18. International workshop: Novel strategies to fight respiratory viral diseases. Common cold, SARS, Pandmic Influenza. Oktober 12-13, 2009. Berlin, Germany.
19. Fifth Orthomyxoviurs research conference. Medical Microbiology Institute, Freiburg University, Freiburg, Germany. September 9-12, 2009 (A novel chemical drug inhibits Influenza A virus replication via down-regulation of autophagy in Raf-1 dependent process).
21. Fourth Biennial Meeting of the Chlamydia Basic Research Society, Little Rock, Arkansas, USA, March 20-23, 2009 (IFN- γ -Inducible Irga6 Mediates Host Resistance against Chlamydia trachomatis via Autophagy).
22. Sixth meeting of the European Society for Chlamydia Research, University of Aarhus, Aarhus, Denmark, July 1-4, 2008 (The interferon-inducible GTPase IIGP1 functions in resistance against Chlamydia trachomatis via autophagy).