

1. Publications

The publications listed below cover all articles, editorials, opinions, comments, reviews and book chapters published by members of RIIB (2016-2018) and MPUSP (since 2018).

1.1. Preprints

1. Cornejo FA, Driller K, Ahmed-Begrich R, Schmidt K, Jahn M, Shanmuganathan V, Hahnke K, Kondrot F, Wulff TF, Rämisch S, Alagesan K, Charpentier E and Turgay K (2025) Targeting the translation machinery: The RNase Y specificity factor Y-complex coordinates ribosome degradation. bioRxiv. doi.org/10.1101/2025.06.27.661978
2. Rubinić M, Arias-Rojas A, Martinez KA, Klimek W, Paczia N, Alagesan K, Duneau D and Iatsenko I (2025) Sex differences in *Drosophila* intestinal metabolism contribute to sexually dimorphic infection outcome and alter gut pathogen virulence. bioRxiv. doi.org/10.1101/2025.05.22.655590
3. Alver R, Hantke I, Cornejo FA, Gunka K, Rämisch S, Molière N, Charpentier E and Turgay K (2022) Protein arginine phosphorylation and de-phosphorylation facilitates protein homeostasis by a unique AAA+ chaperone protease system. bioRxiv. doi.org/10.1101/2022.09.15.508104
4. Alagesan K, Ahmed-Begrich R and Charpentier E (2022) Improved N- and O-Glycopeptide identification using High-Field Asymmetric Waveform Ion Mobility Spectrometry (FAIMS). bioRxiv. doi.org/10.1101/2022.12.12.520086

1.2. Original Articles

5. Krause K, Franch Arroyo S, Ugolini M, Kueck T, Sullivan TJ, Gálvez EJC, Muenzner M, Goosmann C, Brinkmann V, Frese CK, Alagesan K, Vierbuchen T, Heine H, Resch U, Sander LE and Charpentier E (2025) *Streptococcus pyogenes* EVs induce the alternative inflammasome via caspase-4/-5 in human monocytes. EMBO Rep. 26(19):4847-4885. [doi: 10.1038/s44319-025-00558-7](https://doi.org/10.1038/s44319-025-00558-7)
6. Andrianova EP, Dobbins AL, Erhardt M, Hendrixson DR and Zhulin IB (2025) FliO is an evolutionarily conserved yet diversified core component of the bacterial flagellar type III secretion system. PNAS 122(34):e2512476122. [doi: 10.1073/pnas.2512476122](https://doi.org/10.1073/pnas.2512476122)
7. Ignatov D, Shanmuganathan V, Ahmed-Begrich R, Alagesan K, Hahnke K, Wang C, Krause K, Cornejo FA, Funke K, Erhardt M, Frese CK and Charpentier E (2025) RNA-binding protein YebC enhances translation of proline-rich amino acid stretches in bacteria. Nat. Commun. 16(1):6262. [doi: 10.1038/s41467-025-60687-4](https://doi.org/10.1038/s41467-025-60687-4)
8. Einkenkel R, Qin K, Schmidt J, Al-Otaibi NS, Mann D, Drobnič T, Cohen EJ, Gonzalez-Rodriguez N, Harrowell J, Shmakova E, Beeby M, Erhardt M and Bergeron JRC (2025) The structure of the complete extracellular bacterial flagellum reveals the mechanism of flagellin incorporation. Nat. Microbiol. 10(7):1741-1757. [doi: 10.1038/s41564-025-02037-0](https://doi.org/10.1038/s41564-025-02037-0)
9. Halte M, Popp PF, Hathcock D, Severn J, Fischer S, Goosmann C, Ducret A, Charpentier E, Tu Y, Lauga E, Erhardt M and Renault TT (2025) Bacterial motility depends on a critical flagellum length and energy-optimized assembly. Proc. Natl. Acad. Sci. U. S. A. 122(11):e2413488122. [doi: 10.1073/pnas.2413488122](https://doi.org/10.1073/pnas.2413488122)

10. Massoni SC, Evans NJ, Hantke I, Fenton C, Torpey JH, Collins KM, Krysztofinska EM, Muench JH, Thapaliya A, Martínez-Lumbreras S, Hart Ferrell S, Slater C, Wang X, Fekade R, Obwar S, Yin S, Vazquez A, Prior CB, Turgay K, Isaacson RL and Camp AH (2025) MdfA is a novel ClpC adaptor protein that functions in the developing *Bacillus subtilis* spore. *Genes Dev.* 39(7-8):510–23. [doi: 10.1101/gad.352498.124](https://doi.org/10.1101/gad.352498.124)
11. Hu H, Popp PF, Hughes TCD, Roa-Eguiara A, Rutbeek NR, Martin FJO, Hendriks IA, Payne LJ, Yan Y, Humolli D, Klein-Sousa V, Songailiene I, Wang Y, Nielsen ML, Berry RM, Harms A, Erhardt M, Jackson SA and Taylor NMI (2025) Structure and mechanism of the Zorya anti-phage defence system. *Nature* 639(8056):1093-1101. [doi: 10.1038/s41586-024-08493-8](https://doi.org/10.1038/s41586-024-08493-8)
12. Chatzimpinou A, Diehl A, Harhoff AT, Driller K, Vanslembrouck B, Chen JH, Kairišs K, Loconte V, Le Gros MA, Larabell C, Turgay K, Oschkinat H and Weinhardt V (2025) Soft X-ray tomography reveals variations in *B. subtilis* biofilm structure upon *tasA* deletion. *NPJ Biofilms Microbiomes* 11(1):23. [doi: 10.1038/s41522-025-00659-0](https://doi.org/10.1038/s41522-025-00659-0)
13. Ajay Castro S, Passmore IJ, Ndeh D, Shaw HA, Ruda A, Burns K, Thomson S, Nagar R, Alagesan K, Reglinski M, Lucas K, Abouelhadid S, Schwarz-Linek U, Mawas F, Widmalm G, Wren BW and Dorfmueller HC (2025) Recombinant production platform for Group A *Streptococcus* glycoconjugate vaccines. *NPJ Vaccines* 10(1):16. [doi: 10.1038/s41541-025-01068-2](https://doi.org/10.1038/s41541-025-01068-2)
14. Wulff TF, Ahmed-Begrich R, Hahnke K, Jahn M and Charpentier E (2025) Novel assembly of the SF370 strain of the important human pathogen *Streptococcus pyogenes* serotype M1. *Microbiol. Resour. Announc.* 14(1):e0119724. [doi: 10.1128/mra.01197-24](https://doi.org/10.1128/mra.01197-24)
15. Jahn M, Crang N, Gynnå AH, Kabova D, Frielingsdorf S, Lenz O, Charpentier E and Hudson EP (2024) The energy metabolism of *Cupriavidus necator* in different trophic conditions. *Appl. Environ. Microbiol.* 90(10):e0074824. [doi: 10.1128/aem.00748-24](https://doi.org/10.1128/aem.00748-24)
16. Wulff TF, Hahnke K, Lécrivain AL, Schmidt K, Ahmed-Begrich R, Finstermeier K and Charpentier E (2024) Dynamics of diversified A-to-I editing in *Streptococcus pyogenes* is governed by changes in mRNA stability. *Nucleic Acids Res.* 52(18):11234-11253. [doi: 10.1093/nar/gkae629](https://doi.org/10.1093/nar/gkae629)
17. Gray DA, Wang B, Sidarta M, Cornejo FA, Wijnheijmer J, Rani R, Gamba P, Turgay K, Wenzel M, Strahl H and Hamoen LW (2024) Membrane depolarization kills dormant *Bacillus subtilis* cells by generating a lethal dose of ROS. *Nat. Commun.* 15(1):6877. [doi: 10.1038/s41467-024-51347-0](https://doi.org/10.1038/s41467-024-51347-0)
18. Halte M, Andrianova EP, Goosmann C, Chevance FFV, Hughes KT, Zhulin IB and Erhardt M (2024) FlhE functions as a chaperone to prevent formation of periplasmic flagella in Gram-negative bacteria. *Nat. Commun.* 15(1):5921. [doi: 10.1038/s41467-024-50278-0](https://doi.org/10.1038/s41467-024-50278-0)
19. Osbelt L, Almási ÉDH, Wende M, Kienesberger S, Voltz A, Lesker TR, Muthukumarasamy U, Knischewski N, Nordmann E, Bielecka AA, Giralt-Zúñiga M, Kaganovitch E, Kühne C, Baier C, Pietsch M, Müsken M, Greweling-Pils MC, Breinbauer R, Flieger A, Schlüter D, Müller R, Erhardt M, Zechner EL and Strowig T (2024) *Klebsiella oxytoca* inhibits *Salmonella* infection through multiple microbiota-context-dependent mechanisms. *Nat. Microbiol.* 9(7):1792-1811. [doi: 10.1038/s41564-024-01710-0](https://doi.org/10.1038/s41564-024-01710-0)
20. Lautenschläger N, Schmidt K, Schiffer C, Wulff TF, Hahnke K, Finstermeier K, Mansour M, Elsholz AKW and Charpentier E (2024) Expanding the genetic toolbox for the obligate human pathogen *Streptococcus pyogenes*. *Front. Bioeng. Biotechnol.* 12:1395659. [doi: 10.3389/fbioe.2024.1395659](https://doi.org/10.3389/fbioe.2024.1395659)

21. Muñoz-Gutierrez V, Cornejo FA, Schmidt K, Frese CK, Halte M, Erhardt M, Elsholz AKW, Turgay K and Charpentier E (2024) *Bacillus subtilis* remains translationally active after CRISPRi-mediated replication initiation arrest. *mSystems* 9(4):e0022124. doi: [10.1128/msystems.00221-24](https://doi.org/10.1128/msystems.00221-24)
22. Delgadillo-Guevara M, Halte M, Erhardt M and Popp PF (2024) Fluorescent tools for the standardized work in Gram-negative bacteria. *J. Biol. Eng.* 18(1):25. doi: [10.1186/s13036-024-00420-9](https://doi.org/10.1186/s13036-024-00420-9)
23. Daily KP, Badr A, Eltobgy M, Estfanous S, Whitham O, Tan MH, Carafice C, Krause K, McNamara A, Hamilton K, Houle S, Gupta S, Gupta GA, Madhu S, Fitzgerald J, Saadey AA, Laster B, Yan P, Webb A, Zhang X, Pietrzak M, Kokiko-Cochran ON, Ghoneim HE and Amer AO (2024) DNA hypomethylation promotes the expression of CASPASE-4 which exacerbates inflammation and amyloid- β deposition in Alzheimer's disease. *Alzheimers Res. Ther.* 16(1):29. doi: [10.1186/s13195-024-01390-2](https://doi.org/10.1186/s13195-024-01390-2)
24. Huerta M, Cornejo F, Aburto C, Illanes A, Vera C and Guerrero C (2024) Enzymatic production of rare sugars with a new mutant of cellobiose 2-epimerase from *Caldicellulosiruptor saccharolyticus*. *Bioresour. Technol.* 391, 129936. doi: [10.1016/j.biortech.2023.129936](https://doi.org/10.1016/j.biortech.2023.129936)
25. Goldlust K, Ducret A, Halte M, Dedieu-Berne A, Erhardt M and Lesterlin C (2023) The F pilus serves as a conduit for the DNA during conjugation between physically distant bacteria. *Proc. Natl. Acad. Sci. U. S. A.* 120(47):e2310842120. doi: [10.1073/pnas.2310842120](https://doi.org/10.1073/pnas.2310842120)
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28. Grätz L, Kowalski-Jahn M, Scharf MM, Kozieliwicz P, Jahn M, Bous J, Lambert NA, Gloriam DE and Schulte G (2023) Pathway selectivity in Frizzleds is achieved by conserved micro-switches defining pathway-determining, active conformations. *Nat. Commun.* 14(1):4573. doi: [10.1038/s41467-023-40213-0](https://doi.org/10.1038/s41467-023-40213-0)
29. Hu H, Popp PF, Santiveri M, Roa-Eguiara A, Yan Y, Martin FJO, Liu Z, Wadhwa N, Wang Y, Erhardt M and Taylor NMI (2023) Ion selectivity and rotor coupling of the *Vibrio* flagellar sodium-driven stator unit. *Nat. Commun.* 14(1):4411. doi: [10.1038/s41467-023-39899-z](https://doi.org/10.1038/s41467-023-39899-z)
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32. Tcyganov EN, Sanseviero E, Marvel D, Beer T, Tang HY, Hembach P, Speicher DW, Zhang Q, Donthireddy LR, Mostafa A, Tsyganova S, Pisarev V, Laufer T, Ignatov D, Ferrone S, Meyer C, Maby-El Hajjami H, Speiser DE, Altioik S, Antonia S, Xu X, Xu W, Zheng C, Schuchter LM, Amaravadi RK, Mitchell TC, Karakousis GC, Yuan Z, Montaner LJ, Celis E and Gabrilovich DI (2022) Peroxynitrite in the tumor microenvironment changes the profile

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33. Buttress JA, Halte M, Te Winkel JD, Erhardt M, Popp PF and Strahl H **(2022)** A guide for membrane potential measurements in Gram-negative bacteria using voltage-sensitive dyes. *Microbiology* 168(9). [doi: 10.1099/mic.0.001227](https://doi.org/10.1099/mic.0.001227)
 34. Christensen S, Rämisch S and André I **(2022)** DnaK response to expression of protein mutants is dependent on translation rate and stability. *Commun. Biol.* 5(1):597. [doi: 10.1038/s42003-022-03542-2](https://doi.org/10.1038/s42003-022-03542-2)
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 39. Vowinckel J, Hartl J, Marx H, Kerick M, Runggatscher K, Keller MA, Mülleler M, Day J, Weber M, Rinnerthaler M, Yu JSL, Aulakh SK, Lehmann A, Mattanovich D, Timmermann B, Zhang N, Dunn CD, MacRae JI, Breitenbach M et al. **(2021)** The metabolic growth limitations of petite cells lacking the mitochondrial genome. *Nat. Metabol.* 3(11), 1521–1535. [doi: 10.1038/s42255-021-00477-6](https://doi.org/10.1038/s42255-021-00477-6)
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- microaerophilic adaptation, and metabolism of *Mycobacterium tuberculosis*. mBio 12(4):e0166521. [doi: 10.1128/mBio.01665-21](https://doi.org/10.1128/mBio.01665-21)
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